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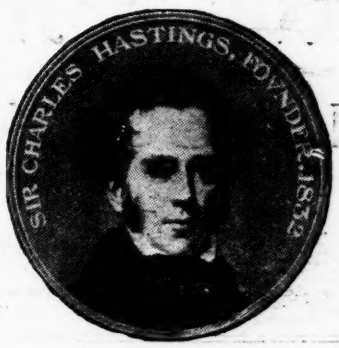

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A British Medical Association Lecture
ON
RADIUM THERAPY.

BY
ROBERT KNOX, M.D.,
HONORARY RADIOLOGIST, KING'S COLLEGE HOSPITAL; DIRECTOR, RADIOTHERAPEUTIC DEPARTMENT, CANCER HOSPITAL.

THE subject on which I have been asked to speak covers so much ground that it will be possible only to deal with broad principles and give an indication of the value of radium in treatment—more particularly in the treatment of malignant disease, for it is in this field that so much has been expected from the use of radium.

New agents, whose powers are not at first properly appreciated, must pass through the stages of overestimation, depreciation, and possibly rejection, before their true value is arrived at. When an agent which appears to act upon all structures with which it comes in contact is employed, the difficulties increase proportionately with its effect upon these structures, and the greatest care must be exercised in all attempts to estimate its value. The radio-active bodies belong to this class, and it is very difficult even approximately to estimate their value.

The range of therapeutic activity of radiations is an exceedingly wide one, extending from the ultra-violet to the penetrating gamma rays of radium. The fundamental principle of radiation therapeutics is easily understood, if it is realized that the wave length of the radiation is the determining factor. When the correct wave length for a particular depth has been estimated, it is then merely a matter of time—that is, duration of the exposure—to produce a particular effect upon the tissues. The effect of radiations is dependent upon the power of absorption the tissues possess for these particular wave lengths, and the absorption of the radiations causes changes in the cells, which may vary in their degree; amongst others chemical changes may result which have a far-reaching effect upon the organism.

In order to obtain effects over a wide range of morbid processes, it is necessary to have at our disposal radiations of all wave lengths, so that any condition may be treated. In *x* rays and radium we possess the particular values required. Large quantities of radium may be used with advantage, as, for example, at the Middlesex Hospital, where 5½ grams have been used for varying times in the treatment of malignant disease.

Relative Values of X Rays and Radium.

A great deal of unnecessary discussion has taken place on the relative values of *x* rays and radium rays, the assumption being that these agents act differently on the tissues. The matter will be more clearly understood if we assume that we are dealing with radiations which have a very wide range of wave length, the gamma ray from radium representing the extreme limit of penetrating power. Given an equal wave length from either agent the effect will be the same. The *x*-ray value has been, up to the present, limited by the inability of the apparatus to generate the high voltage necessary to produce *x* rays equal to the gamma ray from radium. So far it has only been possible to use voltages from 200,000 to 300,000; the voltage required to produce *x* rays equal to the hardest gamma rays is approximately between one and two millions. Nevertheless, the voltages of 250,000 give us a very useful radiation, which, if applied in sufficient intensity, may give very good therapeutic results. For example, cancer of the cervix uteri may be influenced by massive doses of *x* rays administered through several ports of entry. The dose may have to be very prolonged, from five to eight hours at a single treatment. Good effects are claimed for this particular technique. Radium is more applicable to the growth, and gives very brilliant results; these are, however, purely local, and are not permanent. The use of both agents would appear to be a rational procedure. By this method of attack it is possible to obtain the maximum effect from both agents, the radium acting from a local focus, and spreading outwards to the periphery, while the *x* rays are used from the periphery to a central focus point. The tissues are thoroughly saturated and simultaneously attacked from all points. It is possible that in this way peripheral extension of the new growths may be checked.

Superficial lesions are the most favourable for treatment, in so far as they can be kept under continual observation and progress noted; occasionally it is possible to remove a piece of tissue for examination, when changes in tissue due to the treatment may be noted, and the exact character of the condition ascertained. The study of the changes induced in superficial structures gives an accurate indication of the type of case likely to respond to treatment, and also illustrates clearly the probability of influencing deeper morbid conditions; for it will be seen that the simple conditions, such as chronic inflammatory lesions, simple ulcers, naevi, etc., can be beneficially treated with a remarkable accuracy, while those conditions which verge on the malignant—that is, rodent ulcer and epithelioma—are more intractable, the very malignant forms of carcinoma frequently resisting treatment altogether.

Exactly the same sequence is noted in the so-called deep therapy. The effects are, however, much more difficult to obtain on account of the greater difficulty in administering the correct dosage; more penetrating radiations are required in order to reach the depth of the lesion, while the intervening tissues absorb in a diminishing ratio, according to their depth from the surface, the radiations which have to pass through them to reach the tumour. When these difficulties are allowed for it will be seen that the order of response is almost identical with that of the more superficial lesions.

Consideration of the Physical Data of Radium.

Before dealing with the technique and practical application of radium a short reference to the physics of radium will be useful.

The physics of radium is a most interesting but somewhat difficult subject for the average medical man, who has long ago left behind him what elementary knowledge he possessed, as a student, of physics. For future medical men there can be no doubt that the physics side of the curriculum must be increased, and it would be well if all practitioners kept closely in touch with this subject throughout their years of practice. A correct appreciation of physical laws will enable them to understand many things which are at present obscure.

It is now known that the *x* rays are another manifestation of radiant energy, of which light and heat are familiar examples. The *x* rays resemble light rays in almost every particular, the chief difference being that the *x* rays have wave lengths about 5,000 times shorter—that is, the *x* rays are situated far beyond the violet end of the visible spectrum, and may be regarded in a sense as a "treble" form of ultra-violet light. It was this very minuteness of wave length—a distance of the same order as the size of atoms—that defeated all the earliest attempts to direct and sort out the rays. Just about a single octave of light waves is visible to the eye.

RADIUM.

The prominent member of the uranium series of radio-active elements, belonging to the alkaline earth group of elements. Its parent is ionium, and its disintegration product radium emanation. Radium was discovered in 1898 by M. and Mme. Curie. The discovery was preceded by Becquerel's discovery of radio-activity in 1896.

RADIUM SALTS.

The word radium, as it is generally used, signifies a radium salt, and in a stricter sense generally up to the present radium bromide ($RaBr_2.2H_2O$). Other salts are used, however, so in describing preparations of radium it has become customary, as well as more accurate, to state the radium element content of the salt. Buyers of radium are advised in their own interests to have the salt certified by the National Physical Laboratory, Teddington.

The salts most commonly used are the sulphate, bromide, and chloride. The hydrated bromide ($RaBr_2.2H_2O$), when pure, contains about 53.6 per cent. of radium element. The pure anhydrous radium bromide (RaBr) contains 58.6 per cent. radium element. The pure sulphate ($RaSO_4$) contains 70.2 per cent. radium element and pure radium chloride ($RaCl_2$) contains 76.1 per cent. radium element. The chloride and bromide are soluble in water, while the sulphate is insoluble in water and soluble in acids.

Radium emanation has a steady decay period; it falls to half value in about five days; when using the emanation in treatment the decay value has to be taken into account in estimating the exposure.

In whatever manner the radium is used—that is, in tubes, plaques, or in the form of emanation in suitable containers—

TABLE I.—*Uranium-Radium Family.*

(1) Name.	(2) Atomic Weight.	(3) Half Decay Period.	(4) Radiation.
Uranium 1	238	5 billion yrs.	Alpha.
Uranium X1	234	24.6 minutes	Beta, gamma.
Uranium X2	234	1.15 minutes	Beta, gamma.
Uranium 2	234	Abt. 1,000,000 yrs.	Alpha.
Ionium	230	Abt. 100,000 yrs.	Alpha.
Radium	226	1,700 yrs.	Alpha.
Radium emanation (niton)	222	3.85 days	Alpha.
Radium A	218	3 minutes	Alpha.
Radium B	214	26 8 minutes	Beta, gamma.
Radium C ... ... (99.97%) (0.03%)	214	19.5 minutes	Beta, gamma (alpha).
Radium C2 ... ... (side reaction 0.03%)	210	1.4 minutes	Beta, gamma.
End 0.03%	210	—	—
Radium C1 ... ... (main reaction 99.97%)	214	0.000001 second	Alpha.
Radium D	210	16.5 yrs.	Soft beta.
Radium E	210	5 days	Soft beta.
Radium F (polonium) ...	210	136 days	Alpha.
Radium G (end product)	206	—	No rays, atoms stable.

it is found that there are three types of rays given off: alpha, beta, and gamma. The alpha ray is not used to any extent. The beta and gamma rays are most active, and induce changes in the tissues which are most important from the therapeutic point of view. It is on a correct appreciation of the biological action that successful treatment will depend. The point cannot be dealt with fully now, but it is essential that the radiologist be fully conversant with this matter.

Beta rays are negative electrons shot out from the nucleus of the transmitting radium atom with a velocity which in some cases is nearly that of light. Beta rays are more penetrating than alpha rays, the swifter or harder beta rays being half absorbed in almost 1 mm. of soft tissue or 0 1 mm. of lead or silver. The next equal thickness of these materials will then absorb about 50 per cent. of the remaining ray, so that 10 mm. of tissue, or 1 mm. of lead or silver, absorbs 99.9 per cent. of these hard beta rays. The beta rays from radium B and C, in equilibrium with a gram of radium element, produce per hour 4.3 calories of heat. A bundle of parallel beta rays will be deflected from its path by passing through a strong electromagnetic or electrostatic field due to their negative charge, and observations of this deflection in fields of known strength serve to measure the velocity of the beta rays, since the faster the electron travels the less the deviation in a field of given strength. The beta rays are closely related to the gamma rays.

Gamma rays are ether vibrations of very short wave lengths (therefore similar to light and x rays); they are caused by the rapid vibrations set up in electrons in the structure of the transmitting element by the electrostatic repulsion between the electron and the escaping high-speed beta ray. The hardest gamma rays from radium B and C are due to beta rays which have initial velocities corresponding to differences in potential of from 500,000 to 2,000,000 volts, and it is probable that the production of x rays of the same short wave length as the gamma rays from radium will require the use of such high potentials.

Recent work, using the molecular crystal structure as a space grating, has led to the determination of the wave lengths of the characteristic x rays and of the softer gamma rays. The wave length of the hard gamma rays is too small to be satisfactorily examined by this method. It is estimated that the wave length of the hard gamma rays lies between 0.01 and 0.001 Angström unit, while the x rays lie in a range between 10 and 0.05 Angström unit, visible light 7 200 to 4,000 Angström units, ultra-violet in the range 4,000 to 200 Angström units, and the longer radiant heat waves beyond the red run from 0.06 mm. down to 7,600 Angström units, the Hertzian or wireless waves following on these.

Secondary rays are formed when these primary rays impinge upon matter. The alpha rays give rise to a delta ray. Secondary beta rays are produced in matter by the absorption of the gamma rays.

Filtrations of Radiations from Radium.

For this purpose metal filters are commonly used. These are silver, brass, steel, lead, gold, platinum, and aluminium; the thickness in millimetres of these substances necessary to absorb 99.9 per cent. of the hard beta rays from radium is as indicated by the figures following:

Silver	1.0 mm.	Gold ...	0.6 mm.
Brass	1.3 ,,	Platinum	0.5 ,,
Steel	1.4 ,,	Aluminium	4.0 ,,
Lead	1.0 ,,		

The most useful screens are those of silver and brass.

TABLE II.—*Density and Screening Power of Various Materials.*

Ray Absorbing Material.	Approximate Density.	Thickness of Absorbing Material required to absorb 50 per Cent. of the Hard Beta Rays of Radium.	Thickness required to absorb 99.9 per Cent. of Hard Beta Rays of Radium.
Water	1 0	1.00 mm.	10.00 mm.
Gum rubber ...	1.0	1.00 mm.	10.00 mm.
Soft tissues ...	1.0	1.00 mm.	10.00 mm.
Bone	1.7-2.0	0 60 mm.	6.00 mm.
Glass	2 6	0.40 mm.	4.00 mm.
Aluminium ...	2.7	0.40 mm.	4.00 mm.
Steel...	7.7	0.14 mm.	1.40 mm.
Brass	8.5	0.13 mm.	1.30 mm.
Nickel	8.7	0.13 mm.	1.30 mm.
Copper	8.9	0.13 mm.	1.30 mm.
Silver	10.6	0.10 mm.	1.00 mm.
Lead...	11.3	0 10 mm.	1.00 mm.
Gold...	19.3	0.06 mm.	0.60 mm.
Platinum	21.5	0.05 mm.	0 50 mm.

Secondary radiations are given off from metal filters, and these in their turn may have to be filtered because of their injurious action upon the skin; good secondary filters are paper, rubber, gauze, etc.

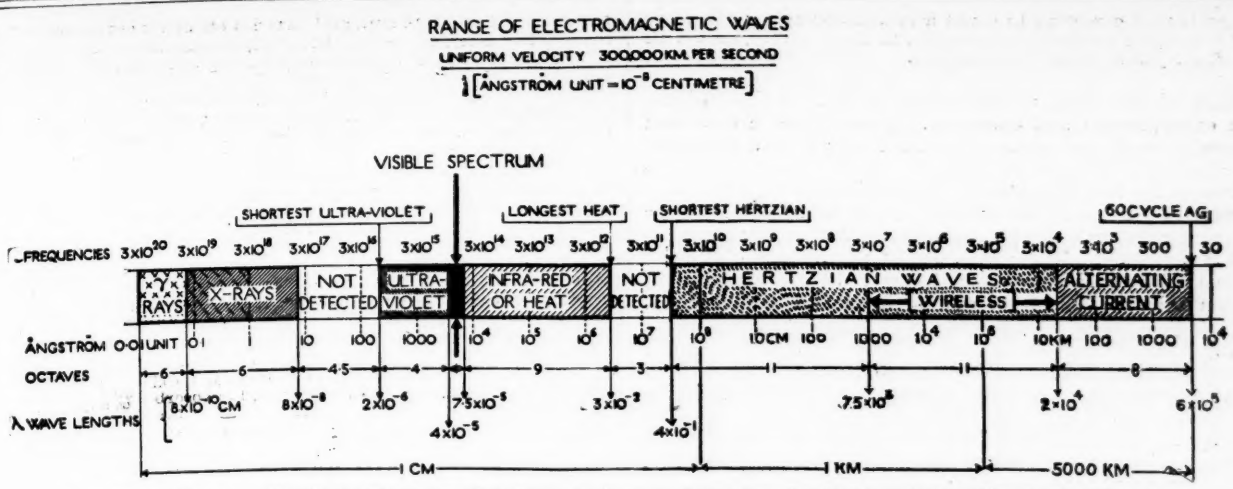
Action of Radiations upon the Tissues.

The physiological effects of the radiations from the radioactive substances are attributable to the "photo-electric" effect—that is, the liberation in the structure of the tissue cells of negative electrons. In the case of primary beta rays which are negative electrons their absorption in tissues suffices to start the action. Gamma rays, by their action in evicting secondary beta rays, produce a similar action by the absorption of these secondary beta rays.

When the aim of the exposure is to utilize the beta rays from radium compounds the duration is so relatively short that the gamma ray effect is negligible; but when it is desired to obtain the effect from the more penetrating gamma rays filtration is necessary to cut off the beta rays because of their greater action upon the superficial structure. When dealing with the effects of radiation upon the deeper structures it is necessary to remember that from a point source the intensity of the radiations diminishes inversely as the square of the distance from the source of the radiations. Consequently from a small radium tube, if the intensity of the radiations at 1 mm. is set at unity, at 2 mm. the intensity is 0.25, at 3 mm. 0.11, at 4 mm. 0.06, at 10 mm. 0.01, at 2 cm. 0.0025, at 3 cm. 0.0011.

It is evident from a consideration of these figures that the physiological effect of the gamma rays is limited to distances of 2 to 3 cm. in the treatment of malignant growths, where the dose required to induce the disappearance of the new growth is one which will almost produce a similar effect upon adjacent normal tissue. It also furnishes a scientific proof of the need for thoroughness in the technique of the treatment of malignant disease.

In whichever way the radiations produce these effects—and this is a debatable point on which sound arguments can be advanced on either side—it is imperative that if the tumour is to have administered to it an equal dose of radiations throughout its mass, the radium must be distributed at equal distances, and each tube must have an equal activity.



Illustrating diagrammatically the wide range of electromagnetic waves in Nature. (By kind permission of Dr. G. W. C. Kaye.)

For this reason it is suggested that the most rational technique is to employ that in which the radium is placed in needles or small tubes of an equal capacity and having filters of equal size. The tubes must be placed at distances not less than 2 cm. apart, and all portions of the tumour should be exposed equally. To obtain this, in many cases of malignant disease a most complete surgical operation will be required, and it is essential that a large quantity of radium should be available. The quantity of radium in each tube need not be very large: 10 mg. of element furnishes a fairly active source of radiation; in other cases 25 mg. may be used in each tube.

An alternative to the radium in such cases would be to use the penetrating *x* rays. Combined treatment ensures very thorough radiation of the tumour and its lymphatic field.

The constant endeavour of the *x*-ray instrument designer has been to increase the power of the *x*-ray machine and the vacuum tube in order that radiations of shorter and shorter wave lengths, and therefore greater and greater penetration, could be produced. It is now within the range of practical therapeutics to apply wave lengths of radiation, the production of which necessitates the use of voltages up to 300,000. Great claims are made for the efficiency of the radiations when employed in sufficient intensity and long exposures in the treatment of malignant diseases. It will be increasingly difficult, for technical reasons, to exceed that voltage to any appreciable extent. It is therefore a question whether we should not be content with the use of *x*-ray apparatus working up to 300,000 volts, and rely upon radium for wave lengths beyond those produced at that voltage.

The most important point would be, then, to ensure that a sufficient quantity of radium might be available. For hospital work a well-equipped department would require to have at least 500 milligrams in tubes, and possibly a maximum of 2 grams would be required. Apart from the difficulty of having sufficient radium in the institution, the other argument for centralization of all radiotherapeutic work, especially in deep therapy, is the fact that anaesthetics and surgical operations are often required. Blood examination should be made at intervals, and patients undergoing such heavy treatment must be placed in a hospital or a private nursing institution. The success of radiation therapy depends very largely upon the work of a number of experts acting in unison. Such combined work can more readily be carried out in a large institution.

The next point to discuss will be the varieties of disease likely to benefit from radium treatment. These may be briefly divided into two groups—non-malignant and malignant.

Radium Applications in Non-Malignant Cases.

It is not necessary to discuss cosmetic conditions other than to sound a note of warning in the treatment of the so-called port-wine stains. The greatest care must be taken in these conditions, otherwise the patient will present a result fully as disfiguring as the original mark.

In angiomas of all sizes radium is doing work that is simply remarkable, entirely removing this condition from the surgical field. This is particularly so when dealing with children.

In uterine fibroids, in 40 per cent. of the cases radium or *x* rays should be the agent of choice, but strict regard must be given to certain contraindications.

In uterine haemorrhage radium is almost a specific, but here again due regard must be given to the prevention of certain annoying immediate after-effects, and care must be exercised to ascertain the cause of the haemorrhage. It is well to make it a rule only to treat these cases after consultation with a gynaecologist.

In subacute and chronic leucorrhoea, according to recent reports, radium has proved to be efficient when other methods have failed.

In papilloma of the bladder radium is used after fulguration or operative measures.

In cases of inoperable hypertrophic goitre radium is being employed more and more; in exophthalmic goitre the tendency seems to be in favour of radium as the agent of choice.

The leukaemias offer a large palliative field, and radium seems to control the condition longer than other single methods now employed. Raying the spleen, with transfusion in severe cases, is believed to be the method of choice in many of these conditions.

Enlarged thymus in children, according to a recent article by Heublein, is a field in which radium comes to the front as the agent of choice.

Recent reports seem to indicate that radium might occupy as prominent a place in the treatment of cataract as it now does in the treatment of spring catarrh.

A surgeon seeing the results produced with radium and *x* rays in tuberculous adenitis will be induced to combine radiation treatment with the surgical if in a number of cases he does not recommend its adoption in the first place.

Radium Applications in Malignant Diseases.

At the present time radium is considered the agent of choice in skin cancer when operation has been decided against. Epithelioma, however, being difficult to control, yields only palliative results.

Cancer of the lip, when springing from the skin surface, is occasionally treated by radium. Springing from the mucous membrane (and very early) it is treated with surgery and radium, with *x* rays over the glands of the neck and chest. In advanced cases radium and *x* rays are used over the lesion and glands, including the glands of the chest.

Cancer of the lingual and buccal mucous membrane is treated with radium and fulguration. No sharp-cutting instrument should be used in this region. Salvarsan may be administered as a routine agent in these cases, giving the salvarsan at the height of the radium reaction. This is useful because it is possible to get secondary effects from the combination.

Treatment of malignant disease of the antrum should be operative *plus* radium. Metastasis does not occur so early in these cases, but the glands should be rayed as a routine measure.

Cancer of the oesophagus is a radium case—with perhaps surgery—if in the very early stage. Radium is the best palliative agent in advanced cases, but must be used with care, because of the effect of the rays on the adjoining tissues. Very penetrating *x* rays may be used from the skin surface.

Cancer of the stomach and intestinal tract is treated surgically, followed, if possible, by radiation. The mechanical difficulties in placing radium in the stomach have not been overcome.

Early cancer of the breast is considered surgical, and radium has rendered seemingly inoperable cases operable. Only in inoperable and advanced cases is radium alone employed, and then for its palliative effect. Post-operative radiation treatment is recommended in all cases of cancer. The best time for prophylactic treatment is a question that must be decided for the individual case.

Cancer of the rectum is a condition not treated satisfactorily from any standpoint. If it is inoperable, it should be treated by radium and *x* rays. Colotomy should be performed to prevent irritation to the parts. Radiations should be applied from all available aspects.

Cancer of the prostate should be removed (if early) and radium tubes and needles buried at the time of operation. If inoperable, it may be treated by the use of radium needles via the perineum, or the cross-fire method via rectum and urethra.

In cancer of the bladder radium will be useful, and a suprapubic operation is done in order to facilitate the placing of the radium and to provide for good drainage.

Early cancer of the fundus uteri is a surgical condition if the patient is in a condition to stand a radical operation; otherwise it is a case for radium, and no case, however severe, should be denied the palliative action of radium.

Much of the work which has been done in the past has been experimental and empirical. The technique has been extremely crude, and often left in the hands of men who from their lack of skill and training have not been able to use the radium to the best advantage. But haphazard methods have no place in present-day technique. Take, for example, cancer of the cervix uteri. The patient must be thoroughly prepared as for operation. The gynaecologist is the man best fitted to deal with these very difficult cases. Small quantities of radium or emanations from radium in metal tubes are used. The needle already described is most suitable for this class of work. A tube may be introduced into the cervical canal; around this small needles are inserted into the growth in positions where the greatest activity is required and can be obtained. Close apposition of the tubes to the active edges of the growth will ensure the best results. As many as twelve needles may be inserted into a growth. The cervix with the radium tube and needles is next carefully packed around with gauze, and the vaginal walls are protected (as far as that is possible) by being pushed as far away from the radium as possible. The vagina is next carefully packed and the requisite exposure given. At the end of the time arranged the radium is removed. It may be necessary to give the patient morphine or other sedatives during the exposure. At the end of about ten days the patient is inspected and another exposure given. Then at the end of three weeks a further exposure is made. After these three exposures the patient is kept under observation.

In a short time after the last exposure the improvement sets in, and it is no exaggeration to say that in a number of cases the immediate results of radium treatment are very remarkable. The local tumour disappears and leaves a firm pliable scar. The distressing symptoms clear up and for a time the patient returns to normal health.

In these cases a combination of radium and *x* rays is preferred, the latter being applied from many ports of entry around the pelvis. With the possibility of using the more penetrating *x* rays, of which so much has been heard lately, the prospect of helping the sufferer is greatly improved. With a skilful application of radium followed by large doses of *x* rays, we are almost certain to get vastly improved results. I am trying both methods singly and combined, and at present it is not possible to say which will be the more reliable method to employ in the future.

Cancer of the rectum is one of the disappointments of radium therapy; it is possible that the unfavourable results which have followed upon applications are in part due to the faulty technique. The fixation of the tube of radium is not an easy matter; great skill is required to get it into a position where it will exercise a maximum effect. It is suggested that if the growth could be brought into view by dilating the rectal canal, radium needles could be buried in the mass. In this way the irritation of the rectal mucosa would be to a large extent avoided. Long exposures would then be possible. A large number of small needles could be introduced at regular intervals of space in order to get a uniform irradiation. The aim of the treatment is to induce throughout the tumour a degree of reaction which will result in the absorption of the tumour mass. How this is brought about is not clearly understood, but it is quite clear that if a uniform irradiation is obtained the probability of favourably influencing the growth is greater.

A distinguished physician, who ought to have been better informed, is reported to have stated that radium had proved to be a failure, and that surgeons were giving up its use and turning to penetrating *x* rays in the treatment of malignant disease. This is not true at all, though it may have a semblance of truth in it, because so many disappointing results have followed the use of radium in quite unsuitable and hopeless cases. The failure of radium in those cases is not surprising; and need it be pointed out that radium merely follows upon failure of all other methods of treatment which have no doubt been tried in the cases sent for radium treatment?

Against this statement may be advanced the conclusions of an experienced observer, Professor Frankl of Vienna, who recently lectured in Dublin on the subject of *x* rays and radium. An abstract of his paper was published in the *Lancet* of December 3rd, 1921, p. 1176:

Professor Frankl pointed out that radium had a limited area of action not exceeding 4 cm., and that its effectiveness decreased in ratio to the distance, so that the peripheral portions of a tumour might receive a dose inadequate to destroy but sufficient to stimulate the cancer cells. All the cells of the body were, he said, sensitive to *x* rays or radium, but cancer cells and the specific cells of the ovary more sensitive than others, so that it was possible to destroy tumour cells and the follicles of the ovary without harming the surrounding tissues. Some gynaecologists had, perhaps, expected too much from rays and radium in the treatment of cancer of the neck of the uterus; there was no excuse for abandoning the knife, and a combination of the two methods promised to give better results than either alone; it was important to subject cases operated to subsequent treatment by rays. It was also true that in a small percentage of cases treatment by rays might render an inoperable case operable, or even bring about cure. In Frankl's clinic, of 42 cases of inoperable cancer of the cervix seven had been cured, and 58 per cent. of the cases subjected to ray treatment subsequent to operation remained well for a period of five years. In uterine haemorrhage due to the presence of myomata or unconnected with obvious signs of disease the rays acted upon the follicular elements of the ovary, and by destroying them brought about a cessation of ovarian secretion and so produced amenorrhoea. It had been suggested that small doses might stimulate the follicular epithelium of the ovary and so cure obstinate amenorrhoea.

I am in agreement with Professor Frankl in practically all that he says in regard to radium and cancer. The probability is that in time we shall arrive at a correct estimate of the value of radiations in treatment. The five years given by Professor Frankl as the longest time up to the present he has patients in good health after *x*-ray treatment is not long enough on which to base values. I could quote a large number of cases of malignant disease who have had operations and *x*-ray treatment who are at present quite well. A number of cases in which recurrence has shown itself within the five years period have cleared up and remain well. On the other hand, it is just at the five years limit that I would look out for manifestations of deep-seated secondary deposits, and I would place the critical period upon which statistics may be based, which would be of value, between five and ten years. It is between these times that the end stages of malignancy will show themselves. I mean particularly in reference to carcinoma, for I believe that sarcomata have a much shorter latent period between the discovery and the removal of the primary growth and the deep-seated recurrence.

If and when we can produce statistics, either operative or radiotherapeutical, which clearly show a good percentage of patients alive and well ten years or longer after operation or treatment by radiation, it will be possible to consider the advisability of making statements of curative work in cancer.

It has been my fate to watch a large number of cases of cancer in all parts of the body progress towards the end stages of the malady. These stages are not pleasant ones to contemplate, and they do not encourage one to become optimistic regarding the treatment of malignant disease. True, one sees an occasional brilliant result, and encouragement springs from the sight, but on the whole the results are not good. In a fairly large percentage of cases of carcinoma of the mamma the end condition is one of mediastinal involvement: that is a hopeless condition to deal with. Radiotherapeutic measures may relieve, but they never cure. The last of the involvements is the occurrence of bone metastases. These are much more common than is suspected. They are often overlooked, even in the *post-mortem* room. Radiography has been helpful in discovering these changes in bone. Bone carcinomatosis is more common than we know. It is probably the end manifestation of the cancer process, and it may be localized or very general in its distribution. Involvement of bone may occur within five years of the primary lesion, but in my experience it does not often become evident before the fifth year, and it may appear at a much later date. From the point of view of ray therapy it is a most hopeless condition. The spread of the disease is so extensive that no amount of radiation can possibly influence it for good, though temporary improvement may follow upon thorough radiation. Nor is it likely that ray therapy can prevent the spread to the osseous system unless the primary dosage can be sufficiently large to clear up the primary growth, and any possible infiltration through the lymphatics. It is quite clear that at present we are not giving anything like dosage of such quantity and quality as to influence such wide areas. I therefore plead for the extensive use of radiations from whatever source available, and I hold that in radium we have an agent which helps towards the attainment of cures, since it carries a source of very penetrating radiation into the regions

where it is most needed, and in which in a number of cases it is not possible to get the equivalent dose of x rays delivered. It is well to use large quantities of radiations as early as possible, and to give a sufficient number of exposures at intervals over a period of, say, two months, and then keep the patient under observation for as long as possible. Watch carefully for evidence of recurrence; when this occurs treat it in the same way as a primary growth would be dealt with.

In advocating the use of radium by the surgeon in his operative work, it is clear that two chief points must be realized. He must have a sufficient supply of radium in suitable applicators, and he should know something of the physical properties and action of radium. The principal fields for its use in the hands of the surgeon will be in two types of case:

1. The operable case of cancer, where the whole of the tumour can be removed. Radium is used in this class at the close of the operation as a prophylactic measure. Mr. Sampson Handley is a strong advocate of this method, and he further insists on post-operative ray treatment, the combination giving the patient the best possible chance of a complete recovery.

2. The inoperable case, in which an operation for the use of the radium is justifiable. In this type of case a large field exists, for the majority of surgically inoperable cases will have to be considered from this point of view. The field is a large one, embracing as it does a variety of forms of tumour, and an equally large variety of situations.

It is evident from a consideration of the facts submitted that the possibilities of radium in the treatment of disease have not been nearly exhausted; in fact, up to the present the technique has been more or less experimental. The experience of recent years brings forth two dominant facts. The potency of radium is now acknowledged by all competent workers; it is a most valuable adjunct to the surgeon and the x-ray therapist. Indispensable to both, it is clear that a great future lies before it. To utilize radium to the utmost it is imperative that much larger quantities must be used than has been customary. Instead of talking in milligrams it will be necessary to think in grams, and to devise technique which will make it possible to use with safety much larger quantities. The larger the quantity used the shorter will be the exposure. This in itself will be an important step, particularly in regions in which the applications are not well tolerated, such as the mouth, pharynx, œsophagus, rectum, bladder, etc.

The second important point is concerned with the technique of the application. In order to obtain the maximum effect the radium must be accurately applied. The surgeon must be prepared to perform operations for the insertion of the radium. In internal regions an exploratory operation may be required to locate accurately the tumour and to place the tubes in position. Take, for example, a localized tumour of the pyloric end of the stomach which is inoperable. Is it not possible to anchor the tumour in the operation wound, insert a number of small tubes into the tumour, allow a few hours for the exposure (and with large quantities of radium used this could be limited to a comparatively short period), remove the radium tubes, and close the wound? Such measures may appear to be extreme, but is it not a desperate condition which is being dealt with? Surely it is sound practice to give the patient the chance of even a forlorn hope.

The question of radiations *versus* operation must now be discussed. In all cases, with perhaps one or two exceptions, there can be no doubt that the operative should be the first choice. In all cases where possible radium should be used at the operation, placing it in positions which are likely to contain residual cells. It is surely more logical to endeavour to check at the outset any possible residues than to await their development.

The radium exposures should be followed up by thorough x-ray treatment. The aim of radium and x-ray treatment should be to administer doses of great intensity in the hope that changes may be brought about in the tissues which will lead to the disappearance of any cancer cells.

THE Mayor of Detroit has announced a grant of 1,000,000 dollars for the purpose of consolidating the Children's Free Hospital and the Michigan Hospital at Framington, to provide additional facilities for the treatment of crippled children in Michigan. Additional contributions to the amount of 5,000,000 dollars will be made as money is needed for the development of the joint hospital.

THE DIAGNOSTIC VALUE OF LUMBAR PUNCTURE IN CEREBRAL AND SPINAL HAEMORRHAGES.

BY

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FOR some few years I have realized in increasing degree the extreme diagnostic value of blood mixed with the cerebro-spinal fluid removed by lumbar puncture. It is, of course, to be assumed that the lumbar puncture has been cleanly performed without any great difficulty or prolonged searching, as if that happens local haemorrhage due to the prolonged manipulation of the needle may reach the cerebro-spinal fluid. The blood in such an event is liable to clot easily and is not intimately mixed with the fluid, unless the attempt is renewed on the following or subsequent day, by which time the blood and fluid will be intimately mixed. With this exception, the finding by lumbar puncture of free blood intimately mixed with the cerebro-spinal fluid is a practically certain and invaluable method of rapid differential diagnosis of haemorrhage occurring into the central nervous system, thus distinguishing at once between apoplexy due to haemorrhage and other causes of cerebral confusion and coma—such as embolism, thrombosis, uraemia, encephalitis, tumour, diabetic coma, epilepsy and general paralysis, disseminated sclerosis, heat-stroke, hysteria, and so on. The one other condition in which blood or its derivative pigments is constantly found in the cerebro-spinal fluid is severe concussion with laceration of the brain, and fractured base. Therefore in these two diseases of haemorrhage—either spontaneous, as in apoplexy, or traumatic, due to severe injury—lumbar puncture gives us at once a certain and invariable deciding indication as to whether the lesion is one of haemorrhage within the cranial cavity or not. An examination of the chief textbooks on diseases of the nervous system shows an almost uniform absence of reference to lumbar puncture in the differential diagnosis of apoplexies, though in one or two books devoted to diagnosis the point is mentioned, but not stressed sufficiently.

During the last week I have seen in consultation five cases of acute cerebral apoplexy, in which lumbar puncture showed the cerebro-spinal fluid to be intimately mixed with and opaque with blood. In only two of these cases had cerebral haemorrhage been suggested as the cause of the mental confusion or coma before I saw the patient, uraemia having been diagnosed in two of the cases, and encephalitis lethargica in the other.

The history of the latter case is instructive, inasmuch as the patient lived for fifteen days after the rupture of a small aneurysm on one anterior cerebral artery.

CASE I.

Miss M., aged 44, had not been feeling well, and had a fainting attack in a Turkish bath on March 3rd, but quite recovered. On March 8th she partook of tinned salmon at supper, and was taken acutely ill shortly afterwards with recurrent vomiting and diarrhoea, though other members of the family, who had eaten of the same dish, were unaffected. As soon as the sickness began she felt a "flush of blood to the head," and a sensation of sleepiness, but was quite conscious, though semi-collapsed when seen by Dr. Eric Pritchard of Hampstead at 1.30 a.m. The vomiting did not recur, and next evening she felt stiffness at the back of the neck and the flushing sensation, being drowsy but able to talk. Even on the third day, during intervals of periods of drowsiness, she would get up from the sofa and attend to business, writing cheques and letters, and was perfectly rational, though it was noticed that she had occasional visual hallucinations. Dr. Pritchard considered the case to be one of encephalitis lethargica, and a neurologist who saw her with him on the fifth day confirmed this diagnosis, although he performed lumbar puncture and found the cerebro-spinal fluid intimately mixed with blood, showing changes in colour and general appearance compatible with a history of four days in age. I saw her on the eighth day, as during that day she rapidly became worse, being comatose, with flaccid left hemiplegia, and slight rigidity and muscular twitchings on the right side. The case appeared to me as one of undoubted ingravescent cerebral haemorrhage, confirmed by the free blood found in the cerebro-spinal fluid, as I have never seen the slightest trace of blood in the fluid in cases of encephalitis lethargica. Her state made it seem probable that she could not live more than a day or two, yet she lingered another week, with total flaccid paralysis, dying on March 23rd, fifteen days after the initial symptoms of the cerebral haemorrhage. Dr. Spilsbury made a *post-mortem* examination for Dr. Pritchard and found a ruptured aneurysm, the size of a pea, on the left anterior cerebral artery, one-third of an inch from its

origin, with considerable haemorrhage between the membranes. The blood had forced its way between the frontal lobes, damaging considerably both inner frontal convolutions.

CASE II.

In another case, a woman aged 46, the diagnosis of uraemia had been made, because the doctor in attendance had treated her previously for high blood pressure and occasional albuminuria. She was eight months pregnant, and had been taken suddenly ill when returning home about 6.30 p.m., five hours before I saw her with Dr. Woodcock, of Palmer's Green. She was then quite comatose, with slight generalized rigidity, pin-point pupils, and extremely raucous stertorous breathing. The blood pressure was then 160, the knee-jerks brisk, and bilateral extensor plantar reflexes. Lumbar puncture revealed extensive haemorrhage into the cerebro-spinal fluid, which was intimately mixed and quite opaque with bright red blood. Death occurred five hours later, but the diagnosis made of pontine haemorrhage seems probably correct.

Meningeal haemorrhage resulting from fractured base, and lacerations of the brain due to concussion, will in like manner cause bloodstained cerebro-spinal fluid, the depth of stain varying in proportion to the amount of exuded blood. The staining may be no more than a distinct yellow tinge after the lapse of three or four days, as after the third day a pigment derivative from the blood, of the nature of bile pigment, appears in the cerebro-spinal fluid, due to absorption and chemical changes in a localized collection of blood in the membranes or brain substance. This yellow pigment, appearing after the third or fourth day of an intrameningeal haemorrhage, was shown many years ago by Froin to be practically identical with bile pigment, and gives the Gmelin reaction for bile pigment, but does not give the ordinary test for blood. Thus, a small localized cerebral haemorrhage in the neighbourhood of the internal capsule or other deep area within the brain substance, which has neither reached the surface nor ruptured into the lateral or third ventricle, will signalize its presence by the appearance of this yellow stain in the cerebro-spinal fluid within three days, rather than by the appearance of free blood mixing with the cerebro-spinal fluid, as is the case with the larger cerebro-spinal haemorrhages. In fractured base and laceration of the cortex the injury may be sufficient to cause death within a week, and yet the fluid may be stained only a light yellow, with never any free blood mixed with it.

Meningeal venous haemorrhage may occur from the rupture of a vein, usually into the posterior fossa, in periods of intense vascular congestion, as in men during the act of coitus, especially when performed in an abnormal position, such as when standing, and if the man is in poor health or suffering from headache at the time. Violent headache and faintness, with, very probably, vomiting, occur at once, and intense headache may persist for several days, though complete recovery is the rule after three or four weeks. Free blood in the cerebro-spinal fluid will be found by lumbar puncture during the first few days, the blood being probably recoverable within half an hour or so of a direct haemorrhage into the subarachnoid space. Venous haemorrhages may also occur upon the cortex during the severe congestion of an epileptic fit, or during the strain of violent coughing, as in whooping-cough, the blood either appearing free and intimately mixed with the cerebro-spinal fluid, or indicating its presence after the third day by the yellow tinge of bile pigment.

Spontaneous haematorrhachis, or intraspinal haemorrhage, may occur as the result of an intense muscular effort, and if the bleeding occurs low down in the spinal canal, amongst the roots of the cauda equina, the blood may clot *in situ*, and cause pain in the lower extremities, and motor and sensory paresis for years. Such a case I published in 1912 (*Proc. Roy. Soc. Med.*, Neurolog. Sect., February 15th, 1912, p. 115).

When the blood is extravasated higher up in the cerebro-spinal axis, then the mixture of blood and cerebro-spinal fluid obtained by lumbar puncture does not clot. Spontaneous haematorrhachis, with the formation of clot around one or more roots of the cauda equina, I believe, accounts for not a few cases of persistent pains in the lower extremities following a heavy muscular effort, such cases being usually diagnosed as ruptured muscle, fibrositis, or neuritis, and if the pain is in the front of the thigh the condition may be labelled "meralgia paraesthetica." Lumbar puncture would at once decide the diagnosis in such a case, possibly even one or two years after the onset of symptoms, as in the case quoted above, in which I obtained by lumbar puncture a canary-yellow fluid eighteen months after the primary attack. Another example may be given in which the lesion was almost certainly a spontaneous haematorrhachis.

CASE III.

A man, aged 61, strained his right leg in pushing a heavy iron safe with his knee. Two days later he noticed great tenderness along the front of the thigh, so that he could not bear the bedclothes over it; the pain then spread to the calf and the sole of the foot, which has ever since for the last five years felt as if he were walking on sand or pebbles. The right foot is always cold and blue; there is no anaesthesia, but a varying degree of hyperaesthesia. The knee-jerks and Achilles jerks are unaffected.

Though lumbar puncture was never done in this case, which did not come under my observation until two and a half years after the onset of symptoms, I have no doubt that spontaneous haematorrhachis was the cause, and that lumbar puncture would have shown free blood in the cerebro-spinal fluid in the first few days, and that subsequently the fluid would have been yellow-stained, probably for months.

SIMPLE GOITRE.

BY

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IT may be useful at a time when the prevalence of simple goitre in this country is attracting attention to outline our present knowledge with regard to its causation. I include in the term "simple goitre" those sporadic or endemic cases often encountered in towns and country districts in England. Simple goitre is a deficiency disease due to an insufficient supply of iodine for the needs of the thyroid gland, or more properly for the needs of the body cells in the form of the gland's iodine-containing hormone. Two facts may be stated in proof of this definition: (1) Thyroid hyperplasia is readily produced by the use of diets deficient in iodine; (2) iodine in minute doses will prevent and cure goitre when administered at the proper time and season. But while theoretically goitre can, and sometimes does, arise in consequence of a deficient supply of iodine in the food, it arises more commonly in spite of the fact that there is present in the food a sufficiency of iodine. There is abundant proof of this statement; it will suffice, however, to mention in this connexion the results of one fundamental experiment. If animals be confined in dirty cages they will develop goitre spontaneously, the size of the goitre being dependent on the season of the year and the duration of exposure to the unhygienic conditions. If, however, they be confined in scrupulously clean cages of the same dimensions goitre will not arise. Since the food supply, and therefore the iodine supply, was the same in both cases, it follows that there are factors provided by unhygienic conditions of life, as in dirty animal cages, which render the available iodine in the food insufficient for the needs of the body in these particular circumstances. A sufficiency may become an insufficiency in the presence of such unhygienic conditions. Further, if an additional supply of iodine be provided, or cod-liver oil be administered, goitre will not develop in animals confined in dirty cages. This action of unhygienic conditions of life calls to mind the effect of want of sunlight in favouring the development of rickets when animals are fed on a diet deficient in vitamin A, calcium and phosphorus. The parallel must not, however, be pressed too far, for the mode of operation of the two factors—dirt and want of sunlight—differs; the parallelism is mentioned to emphasize the importance of such general hygienic conditions of life as cleanly surroundings and sunlight in the maintenance of health, an importance which is apt to be minimized in our search for more specific excitants of disease.

This effect of iodine in preventing enlargement of the thyroid gland (goitre) is to some extent exhibited also by free chlorine, although I am not yet certain how far this halogen prevents thyroid hyperplasia. So far as my experiments go they agree in their results with those of Marine, who found that iodine prevents both thyroid hyperplasia and goitre; but while chlorine has in some recent experiments prevented thyroid enlargement, it has not always prevented thyroid hyperplasia without enlargement. Two of the facts proved regarding the production of simple goitre may therefore be stated as follows: (1) That it may arise from an insufficient supply of iodine; and (2) that under unhygienic conditions of life, as represented by dirty animal cages, an additional supply of iodine is—in certain cases especially—

required for the needs of the thyroid gland; failing this additional supply goitre is prone to develop.

Previous work has demonstrated the importance of gastro-intestinal infection (in which may be included infection of the mouth, nose, tonsils, etc.) as a goitre-producing influence. The truth of this is now generally admitted. It is therefore reasonable to conclude that goitre develops in animals confined in dirty cages because their food becomes contaminated by their own excreta. Some animals are more susceptible than others to gastro-intestinal infection carried in this way: hence the individual idiosyncrasy both to goitre and to the size of the goitre that is so apparent in such an experiment. It would seem, then, that the second fact above referred to might be restated thus: Under unhygienic conditions of life, as represented by dirty animal cages or by bacteriological impurity of the alimentary tract, an additional supply of iodine is required for the needs of the thyroid gland—or more properly this additional supply is required in order that the gland may secure a sufficiency for its needs. If it does not secure this sufficiency it hypertrophies. It is unnecessary here to go over old ground[1] dealing with the experimental production of goitre in man and animals, and with the production of its congenital manifestations in animals by faecal material or faecal bacteria, or with the curative action of intestinal antiseptics in recent goitres. What I wish to point out here is that there is nothing in the newer work which does not dovetail into the older, although it may involve some reconstruction of ideas and a wider outlook regarding the combination of causes which gives rise to goitre. Before outlining these causes the most recently discovered fact may be referred to—namely, that excess of fat favours the development of goitre. Briefly expressed, this excess involves an additional strain on the resources of the thyroid gland, and may in consequence be a determining factor in goitre production. Its effect is more marked in some cases than in others, and is more apt to manifest itself in the presence of unhygienic conditions, such as are provided by dirty animal cages or pens, and by an unhygienic alimentary tract. Here, too, the fat excess increases the needs of the thyroid for iodine, and the goitre-producing influence of fat excess can be counteracted by increasing the available iodine in the food.

It is obvious, therefore, that the factors which give rise to goitre centre round the supply of iodine and the needs of the thyroid gland for iodine. Now this supply of iodine is dependent on a multiplicity of factors both extrinsic and intrinsic to the body. It is dependent on the iodine content of the food and water; and this in its turn is dependent on altitude, distance from the sea-coast, and the iodine content of the soil from which both vegetable foods and water derive their iodine supply. Again, the supply of iodine to the thyroid gland, and of the gland's iodine-containing secretion to the body cells, is dependent upon the adequate absorption and assimilation of iodine; this in its turn is influenced by factors such as disordered function of the gastro-intestinal tract and bacterial intervention in the digestive tube, both of which may interfere with the adequate absorption and assimilation of iodine. On the other hand, the needs of the thyroid for iodine are dependent on the needs of the body cells for the active iodine-containing principle of the gland, and these in their turn are dependent upon a multiplicity of factors such as food balance (excess of fats, for example, increasing these needs), metabolic variations, age, sex, puberty, sexual activity, pregnancy, menstruation, infections, and season. There is further to be considered the capacity of the thyroid gland to utilize iodine and efficiently to manufacture its hormone; here are involved such factors as heredity and excessive stimulation of the gland, which may be induced by nervous, toxic, or infectious influences, and impairment of its function, which may be induced by hereditary influences or by toxic or microbic agents, the two last being frequently of gastro-intestinal origin.

These, then, are the chief known factors—physiological, nutritional, metabolic, toxic, infectious, and nervous—which in varying combinations may cause goitre. So it comes about that while theoretically goitre may arise in consequence of actual deficiency of iodine in the food, it is much more likely to arise, and usually does arise, when a number of factors combine to render the available iodine in the food relatively insufficient for the needs of the body under the condition of life in which it finds itself. While, therefore, simple goitre is due theoretically to insufficiency of iodine, it is due in practice to a combination of factors which together bring about this insufficiency.

It is this combination of factors—a combination which may vary within wide limits in different individuals, at different seasons, and in different localities—that constitutes the true cause of goitre in any individual or locality. Indeed, while in one locality a given grouping of factors may serve to induce goitre in a considerable proportion of individuals of the same age, sex, and race, comparatively slight variations in this grouping may suffice to cause notable variations in the incidence of the malady, or lead only to its sporadic occurrence in another locality. Long familiarity with the experimental conditions under which goitre arises has taught me how subject to variation is the combination of factors that may be concerned in the production of goitre, and how different the results may be when variation has occurred in such factors as race, locality, season, climate, and hygienic conditions of life. It is often a matter of extreme difficulty to ensure in subsequent experiments precisely the same conditions as prevailed in previous ones. The fact that the experiments are carried out at different seasons of the year or in a different place, or that in one experiment the animal cages are more scrupulously cleansed than in another, at once introduces variations in causal conditions the influence of which may be paramount. The most we can do, therefore, in regard to the discovery of the cause of goitre, or, indeed, of any deficiency disease, is to determine the combination of conditions under which it arises in the particular individual or locality with which we are dealing. It is by a knowledge of these conditions and of their relative importance, by the rectification of all of them, and by refusing to confine attention to any one of them, that we may hope to prevent and cure goitre.

I have been prompted to write this brief outline of our present knowledge of the causes of goitre because this knowledge is now sufficiently definite to enable us to prevent and to cure the condition. It is pre-eminently one which need not exist in this country if such knowledge of its causation and of its prevention as we already possess be but applied. A single example in this connexion will suffice. In 1913 I demonstrated that the goitre prevalent in a large European school in India was associated with great bacteriological impurity of the water supply. So prevalent was it that 65 per cent. of girls and 45 per cent. of boys above the age of 16 years were goitrous, and a residence of seven or eight years in this school sufficed to cause goitre in 80 per cent. of the pupils. Measures directed to the purification of the water (first by iodine and later by chlorine) reduced the incidence of the disease by 50 per cent. in a period of six and a half months, and the subsequent introduction of a bacteriologically pure water supply has resulted in its complete disappearance. The prevention of goitre is a matter of attention to food and water supply, to individual and to general hygienic conditions of life, and to the varying needs of the body for iodine.

In this outline of the causes of goitre no attempt has been made to go into detail, my object being to provide a concise sketch of the present state of knowledge regarding its etiology.

REFERENCE.

[1] McCarrison: *The Thyroid Gland in Health and Disease*, London, 1917.

DETACHMENT OF THE RETINA, PROBABLY DUE TO EXPOSURE TO LIGHT DURING AN ECLIPSE.

BY

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THERE is perhaps no eclipse of the sun without its quota of damaged eyes. Cases of injury of the usual type were seen after the eclipse of April of last year, despite the many warnings that appeared in the newspapers of the dangers of observation with the unprotected eye. Dr. Oliver Lodge described a case in the JOURNAL of May 14th, 1921 (p. 701), and cases of a similar nature were related in subsequent issues (May 21st, p. 756, and June 4th, p. 837) by Dr. G. Maxted and Mr. H. W. Archer-Hall. An unusual case in which detachment of retina of one eye occurred certainly as a sequel and probably as the direct effect of the eclipse exposure has been seen by us, and it appears of sufficient interest and rarity to merit record.

The patient is a professional man, aged 54, who was in the north during the eclipse, and was seen by one of us (P. M.) on April 13th. The eclipse of the sun (annular) occurred on April 8th. He gave a history which is set out below from notes by N. B. H., on whom the chief share in the care of the case devolved.

Notes made on April 13th (P. M.) show that: Vision right eye was perception of light in the upper part (less than half of field). Vision left eye was 6/6 with a small degree of hypermetropia, about 0.5 D. The right eye showed a very extensive detachment of the retina, involving the whole of the upper half of the eye, and the detachment ballooned downwards so as to obscure the disc and macula, which could not be seen. The vessels running downwards from the disc could be seen from a point which was estimated as being about one disc's breadth below the disc.

The point of greatest interest was the relationship between the patient's looking at the eclipse and the onset of the ocular trouble. He himself quite definitely assigned his looking at the sun as the origin of his visual defect. On first thoughts this view was not regarded with favour (P. M.), but on reconsideration of his history of the onset of the disease in this case; of the fact that the etiology of detachment of the retina is not established; that a violent stimulation of the retina is known to be able to cause damage to the nerve elements of the retina; that it is not unreasonable to regard such violent stimulation as competent to set up an exudation behind the retina; that in this case there was a history of such definite violent stimulation; that exposure to light sets up exudation elsewhere—for example, blistering in sunburn—we decided that we were justified in publishing the case as one of retinal detachment due to excessive exposure to sunlight during an eclipse. Since the patient's home was in London and he desired to return thither he was referred to N. B. H. for further observation and treatment.

When seen on April 15th he stated that he viewed the eclipse with the right eye through a piece of cinematograph film, and also through a tunnel formed by his hand. Half an hour after exposure he saw sparks in the eye; the sensation was worse on the next day. Three days later he noticed that part of the sight of the right eye was obscured; the defect appeared at first downwards and then to the right side. It rapidly got worse. He stated that his eyes had always been good, but that he had an impression that the right eye was always a little less keen of sight than the left. He had seen spots in both eyes some six months ago, but the appearance was only temporary.

Left eye: Vision 6/9, hypermetropia 0.5 D = 6/6 all; Jaeger 1 with additional 2 D. Right eye: Superficies normal, pupil slightly smaller than that of left eye; reacts to light. Fundus reflex dull. Examination showed a huge detachment of the retina as described above, but even of greater extent, for now only a narrow band of the normal lower part of the fundus could be seen. A very few fine vitreous opacities were visible. The patient was in an extremely jumpy and nervous state; he wife said he was always so.

Taking the statement of the association of the eclipse exposure with the incidence of the detachment of the retina at its face value, it seems that there was a probability of some damage to the macular region which alone would be sufficient seriously to injure vision. It therefore did not appear advisable to attempt to relieve the detachment by operation; another consideration supporting this decision was the experience (N. B. H.) that operations do not secure better end-results than the simpler treatment by rest; and, finally, the neurotic temperament of the patient and his strong aversion to operation were conclusive against it. The treatment adopted was: confinement to bed—he was not allowed up even for the natural offices; low diet, mainly slop food; elastic bandage to the one eye; blisters to the right temple on alternate nights; and a potassium iodide mixture.

April 28th. The patient says he sees more of things with the eye. The view of the normal lower part of the fundus is wider, but there is no view of disc or macula. Treatment continued.

May 12th. The great mass of the detachment has gone back, there are only patches of rugous retina, up and to the left, up and to the right, and in the macular region. The vitreous is slightly foggy. It is possible to see all the details of the disc and to trace every vessel therefrom in continuity.

May 26th. The patient says that the eye seems better. Vision 3/60. The vitreous is full of fine dust-like opacities. The retina is not quite so flat as on the last examination; there is a bulge up and outwards. Patient has come to the limit of his toleration of confinement to bed. Short walks allowed out of doors. Fuller diet given. Eye still to be bandaged. All other treatment stopped.

June 11th. A shallow detachment of about 4 D up and outwards, and some wrinkling inwards. In the macular region is a small white opaque elevation (the size of the disc) with a dark shadow under the summit; this appearance may be either due to a dimple or pigment—parallax suggests the former. Radiating outwards from the little hillock are a number of striding edges or folds which spread upwards into the shallow detachment. Disc seen clearly. Vitreous haze much less. Vision 2/60; the wall of the room is seen clearly in all its parts; there is no sense of deficiency; forms are regular. Bright light dazzles him.

June 28th. The small elevation in the macular region is of less size, and there are fine glistening lines radiating out from it; the striding edges that pass outwards to the remains of the detachment are sharper. Vitreous clear. Vision 1/60. Patient allowed to return to work three days a week.

August 31st. Conditions unchanged, patient working four days a week. "Eye does not bother him, but he does not see so well with it."

November. Report received to same effect.

The sequence of events may be fairly summarized as follows: 1. Severe damage to the macula consequent on exposure to sunlight. 2. A succeeding infiltration of the macular region. 3. Extension of the exudate in such quantity as to cause a gross detachment of the retina. 4. Absorption of the greater quantity of the fluid during the weeks of rest. 5. Exposure of the initial area of damage in the macula. 6. Onset of scarring in the macular region.

It is probably fortunate that operation was decided against. Had operation been performed no benefit could have accrued to the patient, since subsequent events proved that the macula was practically destroyed. It is even possible that, had operation been performed, it might have been held to be responsible for the macular injury; in any case, there would have been no certainty that the eclipse was alone to blame for this.

There are good grounds for believing that the majority of detachments succeed some injury or tear of the retina. In this case there was no such injury, unless it can be held that the damage to the macula consequent on the exposure constitutes a point of permeable tissue. It is much more likely that the accumulation of fluid behind the retina was an inflammatory collection—a suggestion to some extent supported by the gradual onset of the cloudiness of the vitreous some time after the detachment reached its full measure.

A METHOD OF PREVENTING PUERPERAL INFECTION.*

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In making a vaginal examination or putting the hand into the uterus abnormal ascent is substituted for the natural descent, with great risk of carrying up infection. The frequency with which these apparently trivial and necessary proceedings either kill, sterilize, or are the cause of chronic invalidism is one of the worst features of obstetrics. Autogenous infections are rare, and cases arising from germs lying in the lower genital tract being pushed up by previously sterile gloved fingers are not autogenous. That the vulva and vagina (particularly its lower part) are septic towards the end of pregnancy is an undisputed fact. As a rule, the lower down in the tract the more numerous, mixed, and virulent

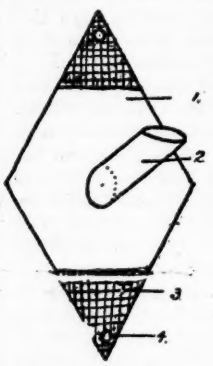

FIG. 1.

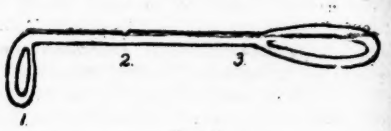

FIG. 2.

FIG. 1.—Digital funnel. 1, A diamond-shaped piece of tough white rubber 9 inches long and 5 inches wide, to cover pubis, perineum, and sides of thighs. 2, Tube part of funnel. Diameter of tube 1½ inches. Length of upper border 3 inches, lower border 3½ inches, so that free end is cut like a Fergusson's speculum. 3, Canvas covering to strengthen angles of funnel. 4, Eye for threading tape. The manual funnel is the same except that the tube part has an oval section; its vertical diameter is 3½ inches and its transverse is 2½ inches, to admit the hand. The upper border of tube is 4 inches long and its lower is 5 inches. The width of its diamond-shaped portion is 7 inches.

FIG. 2.—Repositor for digital funnel. 1, Eye through which the tube is threaded. 2, Mark, 2½ inches from eye. 3, Handle. The instrument is made from round steel about the size of No. 7 catheter. The larger repositor for manual funnel is similar, but the eye is bigger to receive the larger tube, and the mark is 3½ inches from the eye.

do the germs become. Bacteria are common also in the urine, and the germs in the bladder may frequently cause no symptoms there, but if they reach the injured uterus their behaviour may be very different. The proximity of the

* This article was received by the Editor on November 14th, 1921.

anus to the birth canal is a source of danger also. Unfortunately the vulva and vagina cannot be sterilized. The *ante-partum* douche is, even in cases with obvious vaginal discharge, considered dangerous.

The severity of an attack of puerperal infection depends on the resistance of the patient, the time of infection, the site of the wound infected, the extent of the wound, the virulence of germs present, their number and variety (giving an opportunity for dangerous hetero-infections and symbioses to develop). Anything which influences any of these factors favourably for the patient will considerably alter the course of an attack of infection. The danger of vaginal examination is due to the fact that germs are lifted as the fingers touch the vulva and vagina and are carried higher up the genital tract, some being deposited on the cervix. The space between the fingers makes an excellent receptacle for carrying up the highly infected mucus and epithelium from below. In putting the hand into the vagina, folds in the skin of the vulva and mucous membrane of the vagina are opened up and septic epithelium and mucus are forcibly rubbed on the gloved hand. Even the anus and external urinary meatus may be so invaginated that the lower and upper borders of the hand are infected from these sources also. These are factors which assist in making the removal of adherent placentae the most dangerous proceeding of obstetrics.

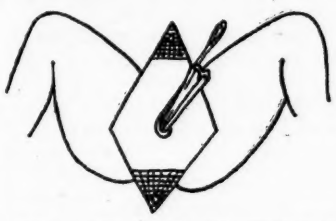

FIG. 3.—The funnel and repositor in position for introduction to vagina. The angles of the funnel are held against the resistance of invagination of first portion, and then they are turned towards the patient as in Fig. 4.

The method I wish to explain depends on the fact that the germs present and unsterilizable on the walls of the lower genital tract and neighbourhood may be passed over and not pushed higher up when making a vaginal examination or introducing the hand into the uterus. The articles required are two funnels and a repositor as in the accompanying sketches.

The smaller funnel for vaginal examination is used as follows, no upward friction between it and the vagina taking place during its insertion. The boiled funnel is smeared with sterile vaseline or sterile soap solution on the surface towards which the tube part lies, or merely on the outer side of the tube. The tube is threaded into the eye of the repositor, as seen in Fig. 3. (The eye of the repositor is such that it is almost filled by the tube.) The funnel is then placed directly opposite the vulva, the labia are separated a little if the patient is a primipara, and the tube is made to enter the vagina as an intussusception by pushing the repositor downwards and backwards into the vagina. (See Figs. 3 and 4.) By this means, as any part of the funnel comes in contact with the genital tract it remains at that level, and therefore does not move any germs present in an upward direction but only turns them aside.

The repositor is only pushed down the vagina (between the entering and returning layers of funnel) for a distance of 2½ in. or up to the mark on the back of the repositor. This is done so that the repositor may not catch on the upper end of the tube when being removed.

The repositor is removed and the examination is carried out through the tube, the fingers placing the upper portion of the funnel against the vaginal walls and arriving at the cervix without contact with the highly infected lower genital tract. The manual funnel is used in a similar way, but the hand itself is the repositor and is carried straight up into the uterus. If the outlet is not dilated up a larger repositor may be used. For version or incomplete abortions difficulty would be expected in repositing the manual funnel with the hand itself.

On removing the funnel the vagina is cleaner than when the funnel entered, and few of the germs are at a lower level, as some of them come away and others are drawn down a little as the tube is removed. By the use of the digital or manual funnel the fingers or hand obviously reach the cervix without contact with infection. To prove that the intussusception of the funnel does not carry up infection I carried out the following experiment on a female dissecting-room subject. Powdered starch was placed on the vulva and lower inch of the vagina. The digital funnel was inserted as described. The upper end was then caught with bullet forceps and the tube taken out again as it entered (care being taken with one finger in the tube that no slipping of the part in contact with the vagina took place). The funnel was now reversed once more, so that the part in contact with the starch was outermost again. A series of matches were dipped in tincture of iodine and the tube was touched at various spots, when it was seen that the blue reaction was only obtained at and below the level to which the starch was placed in the vagina.

I was fortunate enough to have Dr. MacLaverty's permission to try it in the Coombe Hospital, Dublin, where Dr. Keelan, the assistant master there, kindly took the matter in hand. The first patient we examined was in the gynaecology side. We found that the small funnel could be inserted without difficulty or annoyance to the patient, and the examination of her pelvis was quite easily conducted through the tube. Since then Dr. Keelan has tried it repeatedly in gynaecological, maternity, and abortion cases. He tells me that he found it applicable, easily worked, and sound in principle; its introduction was not resented by the patients, and examination through the tube was quite easily conducted.

Occasion has so far not arisen in which to use the manual funnel, so it is with some reluctance that I publish this method without having tried what may be the best part of the idea; but by the advice of others who have seen it and foresee its useful possibilities I am doing so now. The types of cases in which the funnels may be used are many and varied.

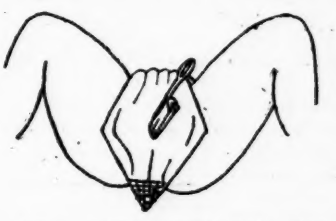

FIG. 4.—Small funnel half introduced. On removing the repositor it is necessary to introduce a finger to keep the tube in position.

The small funnel would be suitable for (1) the ordinary *ante-partum* vaginal examination. (If repeated examination is probably necessary in watching the progress of labour, a bandage may be tied above the trochanters and the funnel retained in position by tapes fastened to the bandage. A sterile cloth is tucked over the funnel, and so repeated examinations may be made without a summation of risk.) (2) The examination and treatment of early abortions. (3) A douche may be safely introduced through the tube in treating *post-partum* haemorrhage.

The large funnel may be used in (1) internal version; (2) rotation of occipito-posterior or mento-posterior presentations, the alteration of brows, etc.; (3) the removal of adherent placentae; (4) the exploration of the uterus in *post-partum* haemorrhage; (5) plugging the uterus for *post-partum* haemorrhage.

A funnel, in fact, may be used in most of the abnormal derangements of pregnancy where a finger, hand, or instrument is to be introduced into the vagina or uterus. Large instruments, as forceps, are an exception, particularly low forceps.

My apology for publishing a comparatively untried method of preventing puerperal infection is the frequency of that condition, and the hope that anyone who may chance to think the method advantageous to his patients may adopt it at once. The length of the tube portions of the small funnel (in particular) may, of course, be cut shorter to suit the length of the fingers of any hand. Messrs. Mayer and Phelps have made very suitable apparatus for my purpose.

VALENTINE MOTT'S ANEURYSM NEEDLE FOR LIGATURE OF THE INNOMINATE AND SUBCLAVIAN ARTERIES.

BY

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MY attention has recently been directed to Sir Charles Ballance's four cases of ligature of the innominate artery published in the JOURNAL last December (vol. ii, 1921, p. 1033). I am at present engaged in the preparation of a descriptive catalogue of the collection of instruments in the Museum of the Royal College of Surgeons of England, and only a few weeks ago I came across a neat little wooden case, measuring over seven inches in length, over an inch in breadth, and under three-quarters of an inch in depth. It is covered with bright red leather, its interior is lined with dark purple velvet, and the inner surface of the lid with light purple silk, padded. The lid is united to the case by the leather covering, without any metal hinge, and is closed with two hooks and eyes, one near each end of the case.

The two instruments described below are fitted accurately into "shapes," while a space at one end of the case, covered in by a lid made out of the velvet lining, is set apart for some waxed flaxen ligature thread wound round a piece of card. Mott, in his notes in Velpeau's work, states that in these operations on the great arteries he preferred "the small

strong ligatures of silk or flax." The ligature employed in his operation on the innominate artery in 1818 was silk. *Raw* silk and catgut, Mott adds, proved less satisfactory.

On the outside of the lid of the case is the following inscription, in Gothic letters, gilt:

Dr. Mott to Bransby B. Cooper.

The dealer's name and address, gilt, but in roman type, is marked on the case, below its line of closure with the lid:

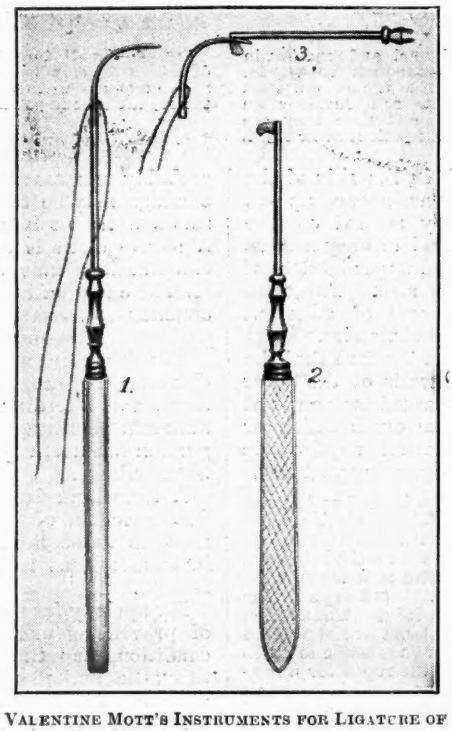
W. L. CARTER, COUTELIER DE LA MARINE ROYALE, PLACE DE L'ODÉON, 4, PARIS."

The MS. catalogue of this collection describes the instruments in question as "Mott's apparatus for ligaturing the subclavian artery, given by Professor Mott to Bransby Cooper, by whom it was presented to the donor." Then follows the donor's name and date of presentation: "J. Birkett, Esq., 1904." No further notes are preserved.

The two instruments in the case are a special mounted aneurysm needle and what Mott calls "the American aneurysm hook."

1. *The Mounted Aneurysm Needle.*—Its total length is 6⅛ in. or 15.5 cm. The metal part to the bend, quite straight, is 3⅛ in. or 7.9 cm., and the curved portion, measured by the curve, 1 in. or 2.54 cm. The stem is inserted with a highly ornamental flange into an ivory handle, chequered on its upper and lower surfaces, and rounded off into a blunt point at its free end. This needle is moderately stout and well curved at the end, where it is blunt. At about 1/8 in. or 0.3 cm. from the end lies the eye for the hooked blade, a slit about 3/16 in. or 0.4 cm. long. A second eye, made for the ligature, somewhat smaller than the other, lies in the stem just below the bend, and about a quarter of an inch (0.6 cm.) lower it unscrews from the rest of the stem. The screw is so finely fashioned that the junction is easily overlooked; on that account it is intentionally made more visible in Fig. 1.

2. *The American Aneurysm Hook or Hooked Blade.* — This instrument measures altogether 5⅜ in. or 14.6 cm. The metal part is 2⅜ in. or about 6 cm. long. The length of the blade is 3/16 in. or 0.4 cm., the depth 1/8 in. or 0.3 cm. The stem and the ivory needle are similar in pattern to the corresponding parts in the aneurysm needle. A small, flat, blunt, hooked blade projects at a right angle from under the free end of the stem, and is fashioned out of the same metal.



VALENTINE MOTT'S INSTRUMENTS FOR LIGATURE OF THE INNOMINATE AND SUBCLAVIAN ARTERIES.

FIG. 1.—The mounted aneurysm needle. The ligature lies in the lower eye of the needle, just beyond the point where it unscrews from the stem.

FIG. 2.—The "American aneurysm hook" or hooked blade.

FIG. 3.—The hook inserted into the upper eye of the needle, which is unscrewed from its stem so that it can be drawn up by the hook, leaving the ligature under the artery.

Valentine Mott, in his translation of Velpeau's *New Elements of Operative Surgery* (New York, 1851), vol. ii, p. 306, describes how he ligatured the innominate in 1818:

"The artery was denuded and kept free from pleura with the aid of a scalpel; a round silken ligature was then readily passed around it."

At page 311 Mott describes the passage of the ligature:

"With the ligature introduced into the eye of one of the smallest blunt needles, which was nearest the shank of the instrument, I pressed down the cellular substance and pleura with the convex part, and very carefully insinuated it from below upwards under the artery. The point of the needle appearing on the opposite side of the artery, *I introduced the hook into the other eye of it, then, unscrewing the shank, the needle was drawn through with the utmost facility, leaving the ligature underneath the artery.*"

The last sentence, printed here in italics, explains the meaning of the needle detachable from its stem, and the hooked blade. Mott (loc. cit., p. 301) writes: "For passing the ligature we have always used the *American aneurysmal hook*, which we consider the best that has ever been invented." According to a footnote it was devised by Drs. Parish, Hartshorne, and Hewson, of Philadelphia, about the beginning of the nineteenth century.*

These contrivances were found necessary on account of the difficulty of operating on the great arteries before the introduction of anaesthetics. The patient's neck could not be held steady, and the contraction of its muscles gave great trouble to the operator and his assistants. Resection of part of the clavicle or sternum to gain space was never attempted. The ingenious mechanism by which the needle was detached and drawn out with the hook overcame the disadvantages of manipulation of the needle and ligature when a long stem remained undetached.

The case of ligature of the innominate artery ended fatally on the twenty-sixth day, but Mott met later on with great success in operations for the ligature of the subclavian. He published a "Case in which the Right Subclavian Artery was tied just as it passes the Scaleni Muscles for an Aneurysm of the Axilla from a Gunshot Wound" (*New York Journal of Medicine and the Collateral Sciences*, vol. iv, 1845, p. 16); the case is also related in Mott's notes in his translation of Velpeau's standard work. In the original report Mott, it is necessary to bear in mind, states that—

"An aneurysmal needle, armed with a strong silk ligature, was now passed round the vessel, the point of the needle being now directed outwards and backwards, so as to avoid the subclavian vein. The artery being then tied, the edges of the wound were brought together by two interrupted sutures."

No note of this special needle and hook is to be found in the 1845 report, where Mott states that—

"It was the fourth where he had put a ligature around the subclavian artery above the clavicle on the acromial side of the scaleni muscles. All the operations have been attended with success."

However, we may conclude that he held that the use of the special detachable needle and "American aneurysm hook" was a mere matter of detail, well known to his colleagues in the city where the journal containing the report was published, whilst in his additions to Velpeau's work he thought it advisable to give a detailed description of those elegant and ingenious appliances. Again, it seems that Mott presented them to Bransby Cooper as instruments for the ligature of the subclavian. In short, Mott probably used them as a rule, if not always, in such operations on these great arteries.

It is instructive to read the opinion of a great contemporary surgeon, Robert Liston, on ligature needles for large arteries. In the fourth edition of his *Practical Surgery*, issued in 1846, the year following the publication of the case of ligature of the subclavian artery, at page 199, Liston states:

"The simple needle will answer the purpose [of passing a ligature round an artery at the root of the neck], but in case of difficulty arising in consequence of the depth of the wound, it is well to be provided with a very admirable instrument, invented and manufactured by Mr. Weiss for the purpose of surrounding deep arteries by ligatures, *or we may employ the needle used by my friend Dr. Mott*, who was the first to practise this operation. Each is so contrived that the point, after having been felt under the vessel, *can be laid hold of and detached from the stalk of the instrument.* The contrivances by which this is effected are simple and ingenious."

* We think that Valentine Mott, in turn, deserves a second footnote expressing some commendation of that great surgeon for his graceful recognition of other men's work. Hey also had recently made it known that it was Cockell of Pontefract, and not himself, who invented that well-known modification of Paré's and Scultetus's bone-saw which always goes by his name (see Hey's *Practical Observations in Surgery*, 1803, p. 8). The College possesses the set of Hey's saws used by himself at the Leeds General Infirmary. They were presented to the museum by Mr. Edward Atkinson in 1905.

TRICHOTILLOMANIA DUE TO THREADWORMS.

BY

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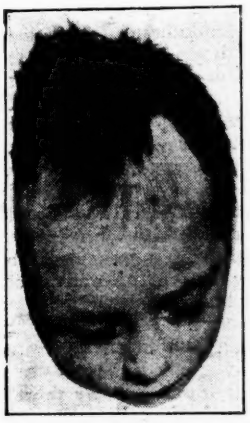
THOUGH the psychic perversion of hair avulsion (auto-epilation) cannot, strictly speaking, be classified amongst diseases of the skin, it is not infrequently referred for treatment to a dermatologist. Hallopeau first described the habit and suggested the name of trichotillomania at a dermatological demonstration in Paris in 1889,[1] and in this country Pernet[2] has twice shown cases at clinical meetings. The literature on the subject is mainly French (Voisin,[3] Féré,[4] Raymond,[5] Dubreuilh and Magne,[6] and Crutchet[7]). A detailed description of the disease, with six cases of his own (seventeen in all), was published by Wolters[8] in 1907, and in this monograph the etiology is very fully discussed.

According to the majority of these authors, the perversion may be associated with epilepsy, general paralysis of the insane, and imbecility, and is fairly frequently observed in asylums and institutions for the demented.

The hair of the moustache and of the eyebrows may be abraded reflexly and epilated, as a result of pruritus, and the habit of tearing the hair occurs also, as is well known, in hysteria, and has been observed in epidemic form in religious revivals and other exalted or depressed conditions of the mind.

So far as I am aware, however, the etiology which undoubtedly produced the "tic" in my patient has not been recognized hitherto. Although certain associated symptoms such as nail-biting, pruritus, convulsions, tumidity of the stomach, etc.—well-known accompaniments of helminthiasis—are described by the French authors enumerated, in some of their cases of trichotillomania the possibility of oxyuris as a common cause for them all does not seem to have occurred to any of them.

Mrs. C. brought her son to me for consultation on February 8th, 1922. He is six years old, and has never had a serious illness, although he looks pale and delicate, and has a coated tongue. Both parents are normal, and there is no history of hereditary disease on either side.



The boy was first noticed to pull out his hair when three years of age, and the habit had become severe enough to produce the considerable disfigurement illustrated by the photograph. The scalp is noticed to be denuded mainly in the left frontal area, and epilation was mostly with the right hand, and at times quite subconscious, so that the child would simultaneously "play with a toy with his left hand and pull out his hair with the right." The habit was not practised during sleep, and there was nothing to suggest that local pruritus in any way disturbed him. Latterly he had been turning his attention to his mother's hair.

The scalp itself appeared to be somewhat deficient in sebaceous secretion, but was not otherwise abnormal or irritated, and the hairs which I epilated (without protest) showed no evidence of dystrophy or other nutritional disturbance.

I was assured that the boy was quite bright mentally, and took a normal interest in his surroundings. Drugs prescribed to "quieten the nerves," and punishment, or threats directed against the continuance of the practice, had all proved unavailing. Inquiry elicited the fact that the appetite was exceedingly capricious, and that threadworms had been noticed in the stools, and treated ineffectively from time to time since the age of eighteen months. The indications were obvious, and the anthelmintic treatment recommended by Still[9] was instituted at once.

On February 22nd the mother reported that the "hair pulling" had ceased. Relapse has not occurred to date (March 25th), the anaemia and appetite are improving, while the risk of reinfection by unhatched ova is being obviated by the continued administration of iron sulphate (Still).

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF INFLUENZA BY SALICIN.

DURING the recent epidemic of influenza I treated 54 cases by the administration of large doses of salicin—20 grains every hour for twelve hours, and then 20 grains every two hours for the next twelve hours. The ages of these persons ranged between 74 and 16 years. Four when seen had a temperature over 104°. The next day (with one exception, when the temperature was 99°) all the patients were normal or subnormal, and remained so; they were up and about the house the day after. There were no complications or sequelae. Ten had temperatures of over 103°, of whom one the next day was 99.2°; the rest were normal. They ran the same course exactly. Thirteen had temperatures of over 102°, and were well in two days. One of these, however, after going out, developed an attack of follicular tonsillitis, to which he is very subject, and which ran its usual course to complete recovery. Twenty-two had temperatures of over 101°, and 15 over 99°. They all rapidly recovered without any drawback. In no single instance was there any bronchitis or pneumonia, nor was there any mischief left behind. The attack of tonsillitis though *post* can hardly be considered *propter* influenza, as on several previous occasions this person has been treated for that complaint; and he had been out at his work for four days before starting it. These 54 cases follow in direct sequence more than 3,000 others which have been treated since 1891 in the same manner with the same results: no ill effects from the salicin; no complications; no sequelae; no deaths.

E. B. TURNER, F.R.C.S.

GONOCOCCAL SEPTICAEMIA.

THE following case goes to prove that gonococcal septicaemia or pyaemia must occur, otherwise secondary infective involvement of other parts of the body away from the usual point of infection could not take place. In the case described below positive blood cultures were obtained on two occasions and on each a skin rash appeared which it was thought might possibly be associated with this condition.

A man, aged 38, was admitted to the surgical wards at the Paddington Infirmary with acute synovitis of the right knee. A history of gonorrhoea three months previously was supported by the condition of the prostate, which was hard, tender, and nodular; the seminal vesicles were palpable. He ran a temperature of from 102° to 104° F., and appeared more toxic than the local conditions warranted. The knee gradually settled down under treatment.

About two weeks after admission intense pain occurred over the outer side of the right thigh. This pain appeared to be localized to the deep fascia, and an acute metastatic involvement of this structure was considered probable. A few days later venous thrombosis occurred in the superficial femoral vein of the right leg about the middle of the thigh, and the leg became very oedematous. Gentle prostatic massage yielded pus and blood from the posterior urethra, and gonococci were found in the smear; previous examination had been negative. A generalized adenitis throughout the body then occurred. The cervical glands in the anterior triangle of the neck were visibly enlarged, and were very tender on palpation, and a free purulent discharge from the urethra commenced.

Ever since admission the patient's temperature had ranged from 102° to 104°, and about three weeks after admission his general condition was much worse. His pulse rate rose at times to 140, and he had frequent rigors, but neither at this time nor in the subsequent course of the disease was there any clinical evidence of endocarditis. A papular eruption appeared at this stage. It was most marked on the extensor surfaces of the forearms and backs of the hands, and on the legs below the knees; large hyperaemic spots were also present. These eruptions faded away in the course of a few days. The next complication was the sudden onset of severe pain over the localized area in the region of the internal semilunar cartilage of the left knee-joint. There was no fluid in the joint then, but a few hours later the joint was hot, painful, and tender, and was fully distended with fluid. Epididymitis of the testicle followed next day, and the right testicle became similarly involved a few days later.

Another crop of papules then appeared, associated with large hyperaemic spots half an inch in diameter as before. A blood culture at this time gave a pure culture of gonococci, from which a vaccine was prepared. The rash disappeared in about three days, and with its disappearance there was a slight improvement in his general condition. A week later another series of rigors occurred, associated with a high temperature and prostration. Hyperaemic areas and papules appeared on the arms. Blood culture was again positive for gonococci. One papule on the hand formed a pustule, but no growth of organisms was obtained from the pus. During the course of the disease arthritic pains and

slight effusions into practically all the joints of the body took place.

Gradual recovery followed, and the temperature was normal about four months after admission. The patient was discharged to the country about two weeks later, with no disability other than a definite involvement of the prostate gland and seminal vesicles, and considerable oedema of the right leg when up and about. Three months later he reported much improvement in general health, but there was still marked oedema of the right leg, with dilatation of the superficial veins. The prostate and vesicles were in the same condition as on discharge, and he is now undergoing treatment for this.

The case seems to be worth reporting in view of the excellent recovery in spite of the very widespread involvement and septicaemia (in the absence of endocarditis). The existence of gonococci in the blood stream, and the rash, which appeared to correspond in time with the rigors and septicaemia, seem also worthy of note.

I wish to express my indebtedness to Dr. G. P. Richardson, of the Inoculation Department of St. Mary's Hospital, for the bacteriological investigation, and to Dr. Stewart, medical superintendent of Paddington Infirmary, for permission to publish the case.

JAMES A. JENKINS, F.R.C.S.Eng.

Paddington Infirmary, London.

ACUTE DIFFUSE NEPHRITIS IN CHILDREN.

ACUTE diffuse nephritis in children is a comparatively rare disease, and in severe forms the symptoms are often not marked, whilst dropsy is rarely present, so that unless the urine is examined as a routine the condition is very often overlooked. Some cases, in fact, present symptoms not typical of the ordinary symptoms of nephritis, consequently the condition at first is frequently attributed to some other disease. For this reason the recording of the following case may be of some value.

A girl aged 9 was sent to this hospital on July 4th, 1921, as a case of acute appendicitis. She was undoubtedly suffering from abdominal pain, and had vomited several times that day. I noticed, however, that the pain was confined to the "umbilical region," and that there was no distension or rigidity anywhere. No tenderness was felt in the right iliac region on palpating deeply. The patient was in a state of apathy, the temperature was 103° F., the pulse rate 140, the respiration rate 36. Dyspnœa was very marked, but there was no sign of pulmonary disease, and no cyanosis. The absence of dropsy was a feature of the case. No rash was noticeable on the body. The tonsils were not inflamed, and there was no enlargement of the glands round the angle of the jaw. No specimen of urine was obtainable at the time of admission; when the father attended on the following day he stated that a week before admission the child ceased to micturate for thirty-six hours, and then the legs became swollen. On the following day micturition started again, and the swelling in both legs suddenly disappeared, but the child began to be sick every time she took food, and the bowels were very loose. The father was very emphatic that this condition commenced suddenly, and that she had never been ill before.

During the night after admission to hospital the patient vomited several times, and the bowels moved frequently, the stools containing a good deal of mucus. The following morning the temperature fell to 99° and the pulse rate to 120, but no change in the general condition of the patient was noticeable. Alkalis and saline injections were administered, but they were not retained, and the vomiting and diarrhœa continued. It was only on the third day that a specimen of urine could be obtained. It was dark in colour and acid in reaction, with a specific gravity of 1020. Albumin was present, but not in a large quantity; no blood was detected; casts, chiefly hyaline and granular, were detected, also diacetic acid. On the fourth day the temperature became subnormal and the pulse almost imperceptible, and the girl seemed beyond any hope of recovery. On the fifth day the temperature rose to 102°; it became normal next day, and thereafter so continued, whilst the pulse improved. Vomiting did not cease until the tenth day and diarrhœa continued a few days longer. Soon afterwards herpes broke out on both hands and feet, the latter being affected most. The herpes lasted a little over a week, and on its disappearance convalescence became rapid, and she was discharged on August 21st last in a healthy condition. The urine was examined daily during the last few days before her discharge and found normal in colour, reaction, specific gravity, and quantity, without a trace of albumin. Since her discharge she has attended at the hospital several times, and has kept in good health. After the disappearance of the acidosis I relied on epinephrine, as recommended by Borelli in the treatment of this form of nephritis. Epinephrine (1 in 1,000) minims 4, with water to 1 drachm, was given every four hours, and, as can be seen, the result was most satisfactory.

The case presented many peculiar and interesting features: (1) The sudden suppression of urine for thirty-six hours a few days before the girl was brought to hospital. (2) Dropsy, following the suppression of urine, first in one leg and then in both legs. The sudden disappearance of dropsy when patient commenced to micturate again. It is also of interest to note that no sign of dropsy was noticed by her family doctor in the face and hands, as is usually the case. (3) The colitis was the only complication noticed, and its severity was exhausting. (4) The appearance of herpes after convalescence had begun. The case shows the difficulty of coming to a diagnosis in severe forms of acute diffuse nephritis. Two years ago I saw a case of this kind in a girl of 16, in whom the main symptoms were vomiting and pain in the epigastric region; she was sent to hospital as a case of gastric ulcer, but examination of the urine afterwards showed the way towards a correct diagnosis.

A. R. SAMI, M.R.C.S.,
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British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

NORTH LANCS AND SOUTH WESTMORLAND BRANCH.

A VERY successful meeting of the North Lancs and South Westmorland Branch of the British Medical Association was held on April 5th at the Furness Abbey Hotel, Barrow-in-Furness, presided over by the President, Mr. A. S. BARLING of Lancaster. Dr. ALEXANDER read a short paper entitled, "A plea for earlier diagnosis of glaucoma." He outlined the symptoms of acute and chronic glaucoma, and laid stress on the necessity of quickly deciding whether a case was one of glaucoma, so as to avoid the tragedy of condemning a patient to blindness through neglect or faulty treatment. He stated that this disease constituted 1 per cent. of all eye diseases. The necessity for instillation of eserine and avoidance of atropine was pointed out. The various operative procedures were briefly noted, and the paper was illustrated by a diagram.

Dr. DEAN stated that after twenty-five years' experience he decided in favour of Hubert's small flap operation, even although Elliot's trephining operation was the more popular. He was more and more driven to the conclusion that all operations were palliative, and the ultimate results were bad as regards sight. Dr. RUTHERFORD reminded the meeting of the fact, important to the man in single-handed practice away from help, when confronted with an acute case, that simple puncture of the sclerotic into the vitreous as far back as possible, resulting in the escape of a little vitreous, tided over the emergency by relieving pressure, and could be safely done by anyone. Dr. FAWCITT thought that in all suspicious cases the urine should be examined.

Dr. G. A. JOHNSTON read notes of a case of puerperal eclampsia which he had attended from start to finish, and frequently examined urine before and after confinement without finding any trace of albumin. The patient gave birth to twins, without any difficulty, before the arrival of the doctor, and one of the twins after birth vomited a large quantity of blood but ultimately recovered. The mother for a few days was completely blind, and the blood pressure reached 200 mm. Treatment consisted of bleeding to a pint, and the administration of chloral and bromide after initial hypodermic injections of morphine and atropine. The patient was confined on March 10th, and was now (April 5th) practically well. Dr. Johnston thought the case illustrated the toxaemic origin of puerperal eclampsia, and he thought that the vomiting of blood by the baby was also toxaemic. Dr. MACDONALD thought in a case like this, where there was no albumin, the faulty metabolism was probably of hepatic origin. Dr. CRAIG mentioned a case he had in which repeated examination before and after fits failed to show albumin, and yet once or twice throughout the period the urine boiled nearly solid and rapidly cleared again, so that he thought there might have been albuminuria in Dr. Johnston's case of an evanescent nature.

Dr. REED showed a child, 4 years old, with extraordinary malformation, which was present at birth. The lower limbs were enormous as compared with the rest of the body. The feet were deformed and superdigitation was present. The child moved along the floor in a shuffling, grotesque manner—right foot and left knee alternately pressing against the floor. Dr. Reed considered the condition was due to interference with development of the lymphatic circulation, and therefore akin to elephantiasis. Other interesting cases were shown by Dr. ALLAN, Dr. MILLIGAN, Dr. FAWCITT, and Dr. LIVINGSTON.

Reports of Societies.

RECOVERY IN MENTAL CASES.

AT a meeting of the Section of Psychiatry of the Royal Society of Medicine on April 11th a discussion was opened by the President, Dr. BEDFORD PIERCE, on the subject of "Recovery."

Dr. BEDFORD PIERCE said that the recovery which he had in mind was recovery in the social sense—not the eradication of morbid tendencies, but the restoration of the previous state, enabling the patient to resume his former life. His remarks bore upon 120 cases of recovery which he had observed since 1908, in which year the system of registration of recoveries instituted by the Medico-Psychological Association was started. He divided these cases into five groups:

1. Relapsed cases which appeared to recover, but eventually did badly—21.
2. Cases in which the cause of recovery was obscure—27.
3. Obscure cases in which heredity might have had an important influence—20.
4. Cases in which recovery appeared to have been brought about by the removal of some physical condition—33.
5. Cases in which recovery appeared to depend upon the removal of some mental stress—19.

It was unfortunate, from the medical point of view, that there were so large a number of cases to which no definite reason for recovery could be assigned. In some of these cases—even those with a long history—it was extraordinary how soon convalescence began after transference to new surroundings. The benefit in these cases did not appear to be due to change of climate, food, or any bodily condition, but to new personal relationships and outlook.

Continued residence in the same mental institution was not always beneficial. One lady in the third group recovered with startling suddenness. She had been ill for four months before admission, and rapidly passed into a state of stupor, in which she required to be tube-fed, and rarely spoke to anyone. Then one day she signalized her recovery by remarking to his colleague, "You have your reward." The remark referred to an observation which the doctor had made to the nurse a few days previously when attending the patient, "Well, I suppose we shall have our reward some day." The factor of auto-suggestion as a means of recovery in these cases of stupor carried one only a little way towards the understanding of their nature. It was obvious that this lady, while stuporous, continued to receive impressions, and it seemed unlikely that his colleague's remark had anything to do with her recovery.

His largest group of recoveries (8 men and 25 women) were cases in which there was definite physical disorder. Alcohol, drugs, and sedatives were responsible in 10 of these cases; the puerperium in 8; post-operative troubles in 4; influenza in 4; and in the remainder a variety of causes, including encephalitis lethargica and diabetes.

As an instance of complicating factors he mentioned one case, a woman of 44, admitted in acute confusion, six weeks after the onset of mental symptoms following influenza. The family history was bad, there was chronic financial difficulty, the woman had been addicted to self-abuse, and she had had the responsibility of nursing her parents. Her recovery was slow, but after five months' residence she was discharged, and remained well for ten years, when, following another attack of influenza, she again had mental trouble, and died in acute mania. Here there were at least five causal factors: heredity, bad habits, financial stress, the strain of nursing, and influenza, which last was probably the one of most immediate importance.

As a general rule he never gave sedatives for restlessness or excitement. It was only when the patient began to show objective signs of wear and tear that he gave them a trial. His last group consisted of persons whose recovery seemed to depend upon the removal of mental strain or the making of new mental adjustments. The psychosis in the majority of these cases was maniacal in character. In one case the attack of mania followed the bombardment of West Hartlepool during the war, after the person concerned had rendered quite heroic aid among the wounded; others were due to grief, household worries, and an unhappy marriage. The removal from home and the introduction to a new social environment did much, but a considerable time was necessary for the recovery to take effect. It was always necessary, in working towards recovery, to bear in mind the necessity for combating secondary factors. Even when the cause was psychogenic, such as thwarted instinct, there was probably an induced toxaemia or a disturbance of the balance of the secretions. Recovery from the psychosis was due, at least in part, to the removal of the associated physical disturbance. Psychiatrists must be eclectic in their methods of treatment, and must not identify themselves with any single method. The mechanism of recovery after all was as obscure in the case of measles or herpes as in delirium or melancholia. The statement often made by those who belittled the success of psychotherapy that it lagged behind general medicine was unfair in view of the inherent difficulty of psychological problems.

Sir ROBERT ARMSTRONG-JONES differed from the psychoanalytic definition of insanity which Dr. Pierce had given—namely, as the withdrawal or retreat from an intolerable situation. He said that in every mental case it was impossible for the person to know what he was escaping from or was trying to escape from. As for the percentage of recovery, in his own experience at Claybury, which extented to nearly a quarter of a century, the recoveries were 33 per cent. Some cases recovered after fifteen or twenty years or longer. The proportion of recoveries was noteworthy among cases which had been transferred to Claybury from a private asylum; this meant no reflection upon the private asylum, because the factor at work might simply have been a fresh social adjustment. He thought that cases with heredity were really more recoverable than cases with no hereditary history at all. Many people were discharged from asylums as recovered, and yet for many months, or even years, were quite unfit to manage their own affairs. One of the greatest factors in recovery was undoubtedly auto-suggestion, which was the same thing as had been described by Chalmers, the great divine, as "the expulsive power of a new affection."

Dr. C. HUBERT BOND said that it had lately been resolved by the Board of Control that medical staffs of mental hospitals should supply copies of their recovery registers to the Board in the same way as, for many years past, they had supplied copies of their admission registers. There were about 22 000 admissions annually into institutions for the insane in this country, and the recovery rate was 33 per cent. But that recovery rate was obtained by including all cases, and it was only fair to eliminate certain groups, such as true senile dementias when clearly diagnosable, also congenital cases which were in a state of idiocy or imbecility, though not the milder forms of congenital mental defect, because upon such a condition there was often superimposed an acute psychosis from which the patient recovered and was able to resume his former life. He thought also that it would be fair, in the present state of knowledge, to eliminate cases of general paralysis from this computation; he was a little doubtful as to the elimination of epilepsy. If these forms of mental disorder were eliminated the recovery rate, instead of being 33 per cent., became 49 per cent. Of the cases admitted some 37 per cent., by all the evidence of parallel cases, were recoverable, and yet for some unknown reason did not recover. The fact that these cases did not recover was a reason for closer and more routine methods of inquiry, both on psychogenic lines and in the laboratory.

Dr. STANFORD READ pointed out that what might be regarded as recovery from the social standpoint was not necessarily recovery from the strictly scientific standpoint. Many mental symptoms were physiogenic in origin, but there were others to which it was impossible to assign a physical cause. He could not think that the question of recovery had been properly considered unless the circumstances of the individual illness had been fully ascertained, and he pleaded for a more intensive study of the individual case, especially in its psychopathological details.

Dr. THOMAS BEATON doubted whether the intensive method of the study of the individual case would reveal as much as the previous speaker supposed, for the most one could get from another individual was what he chose to reveal, and there were barriers to the personality in all cases, normal and abnormal. To his mind the course of recovery had two definite stages: (1) Gradual diminution and final cessation of the actual morbid symptoms; (2) a period of what might be called convalescence (though the patient was still ill) in which an adjustment was proceeding, quite below the level of consciousness, a state usually marked by apathy, submissiveness, and lack of initiative. Time played an important part in all mental processes, including those of the normal person; in grief, for instance, there was no remedy but time, which placed the trouble in its true perspective. With regard to the physical or psychical nature of the cause they were all very much in the dark. Rather too much stress was laid upon infections, which could not be an absolute cause. Metabolic disturbances also doubtless played a part. He dwelt upon the good effects of the confusional state as a release from the previous hallucination in which the individual had been continually rationalizing and building

on the false experience. So long as that rationalizing process went on there was little hope of recovery, but when the patient became confused the intelligence was resting, and the prognosis was more favourable. He believed in the value of sedative drugs, and recalled a case in which a man had an acute hallucinatory psychosis, and was so excited owing to his vivid hallucinations that the only way he could be controlled was by giving him a very heavy sedative, with the result that he became quite confused; at the end of a week arrangements were made for his removal, and the sedative was discontinued, whereupon the man came out of his state of confusion perfectly well and able calmly to discuss the situation.

Dr. HUBERT NORMAN dwelt upon the difficulty of making returns as to recoveries in view of the possibility of relapse. He associated himself with the previous speaker in advocating sedatives. If the deeper cell layers—deeper than those disordered—could be put out of action for the time being, it gave the others, where the disorder had occurred, a chance to settle down and recuperate.

Dr. BEDFORD PIERCE, in reply, said that with regard to the origin of mental disorder, when the condition was extremely severe he could not but think that some toxaemia played a part, in addition, of course, to any psychogenic factor. He looked upon sedatives as agents which caused a slowing down of the protoplasmic activity, thereby delaying the process of repair. Sleep induced by sedatives was probably lost time, and it was better to use baths, fresh air, and other similar methods rather than sedative drugs, though he agreed that some of these last seemed to act in a marvellous manner. He was quite convinced that some cases would never recover so long as sedatives were administered. It was the theory of some physicians with whom he had been called into consultation that if the patients could only be got to sleep the maniacal symptoms would disappear. But he believed that sleep induced by sedatives would only retard the process of recovery.

THE LYMPHOIDOCYTE AND THE TÜRK CELL.

AT a meeting of the Pathological Section of the Liverpool Medical Institution held on April 6th, with Dr. HILL ABRAM in the chair, Drs. J. C. MATTHEWS and C. V. PEARSON contributed a paper entitled "The lymphoidocyte and the Türk cell," giving an account of a research which had been suggested by an article which appeared in the *Lancet* (July 19th, 1919, p. 108), in which Knyvett Gordon described the discovery in the blood of cases of subacute bacterial endocarditis, and other diseases, of a cell to which he considered the name "lymphoidocyte" to be applicable. The writers investigated 225 cases of miscellaneous diseases, and failed to find the lymphoidocyte in any except those of leukaemia. Pappenheim's panoptic stain was used. A discussion was given of haematological terms and of staining methods, with the object of proving that the writers were conforming to well-recognized standards in the use of the term "lymphoidocyte." In the course of the research deeply stained basophil cells were occasionally seen in normal and pathological blood, and were considered to conform to that known as the Türk cell. Reasons were given for regarding the Türk cell as a lymphocyte which has undergone metaplasia, probably as a result of some stimulation or irritation. It was found in abnormal numbers in many conditions, in most of which generalized blood infection was present. Analysis of the findings did not suggest that it had any serious prognostic significance.

PREVENTION OF GYNAECOLOGICAL AFFECTIONS.

THE Glasgow Obstetrical and Gynaecological Society met in the Faculty Hall on March 15th, with the President, Dr. J. BALFOUR MARSHALL, in the chair. Dr. W. D. MACFARLANE read a paper on some preventable causes of gynaecological affections. Ever since Semmelweis (the true pioneer of antisepsis in obstetrics) published his work on the cause, concept, and prophylaxis of puerperal fever in 1861 there had been a greater zeal in the prophylactic side of obstetric practice. Much yet remained to be done in the way of eliminating from medical practice the after-results of difficult and complicated labour, or even simple labour. The large proportion of gynaecological ailments result from the accidents, used in the largest sense of the term, of childbirth. The question for discussion that evening was how many of these unfortunate conditions could be prevented.

No young graduate (continued Dr. Macfarlane) thinks or dreams of doing a major surgical operation, and yet here in the realm of obstetrics he is forced by the nature of circumstances to do so. My plea is for a more extended course of clinical obstetrics under teachers of experience. You may say that it is not very easily obtained. I think it is. It is only a question of money: and surely where the matter is one of such importance—namely, a living mother, and very particularly a healthy mother, as well as a living child—the State should be made to take cognizance of the present position, which seems to me to be far from satisfactory. Thus I think a course of clinical instruction, equal at least to that given in medicine and surgery, is an essential if many of the gynaecological affections resulting from labour are to be prevented. Another aspect of this question is worthy of consideration—the establishment of a State, county, or municipal obstetric service. Medical men in general are not over-anxious to have midwifery cases, at least in any great number, and so the practice is coming more and more into the hands of trained midwives. I heartily welcome this change, as it makes all for prevention of gynaecological cases. The chief essentials are that the nurses are well trained in modern surgical principles, and that they are intelligent and have sufficient experience to guide them in asking for medical assistance. I hope at a future meeting to elaborate this question of an obstetric service, which would, in my judgement, be a real service to the patient and relieve a busy practitioner from the worries of midwifery, which often interferes with his other work. Labour is a natural process which requires time, and should not be hurried unless in cases of emergency—certainly not hurried to suit the other necessities of the busy practitioner. Here, as I have already indicated, is a sure means of prophylaxis.

Dr. Macfarlane then discussed some preventable causes. Of these sepsis claimed its many victims, either in the way of mortality or morbidity. In regard to the latter, many cases of minor sepsis were overlooked. The patient might make no complaint at the time, the pulse might be normal, and the morning temperature normal and perhaps the lochia a little heavy. In a few days the patient was supposed to be able to move about and soon begin her work. Going over 400 consecutive cases in his journals, he found the following statements made by the patients voluntarily: "Never well since the birth of first child"; "Ever since my miscarriage I have been ill"; "Ulceration of the womb ever since first baby." On questioning these women the puerperium had apparently been normal, but they had never been well since the full-time birth or the miscarriage. He wondered how often in general practice any attention was paid to the evening temperature—a small rise not being recorded—yet here was the indication of some minor form of sepsis as a rule. Among the 400 cases there were 118 patients who aborted, some several times—as many as twelve or fourteen times; and after excluding the possibility of syphilitic infection or abortion caused by fibroids, the great proportion were associated with laceration of cervix, backward displacement of uterus, or "chronic inflammatory mischief." Most of these cases were in some degree or other, as far as the history could help, infected to a minor degree; they were never well since the miscarriage—pain and menorrhagia being the chief complaints. The young practitioner and the nurse needed to be more careful in dealing with abortion cases. Associated with these minor and unrecognized forms of sepsis the involution of the uterus was interfered with. If the causes of this condition were more carefully searched for—namely, retained pieces of placenta or membrane, blood clot, the non-suckling of the child—and attention paid to the treatment of constitutional disease of the mother or the results of *ante-partum* and *post-partum* haemorrhage, then this condition, which bulked so largely as a cause of so-called inflammation of the womb, and certainly the cause of so many backward displacements of the uterus, would be dealt with efficiently and the gynaecological affections prevented. In the 400 cases there were 77 cases of retroversely flexed uterus in which the cause seemed undoubtedly puerperal. Timely treatment by pessary might have made later operative treatment unnecessary. Pelvic peritonitis and accompanying salpingo-oöphoritis complicated 44 of the 77 retroflexions—an infection either by continuity of the mucous surfaces or by minor degrees of lymphatic sepsis. The untimely and injudicious use of forceps was responsible in many cases for either laceration of the soft parts or overstretching of the tissue, so that they never regained their former tone, and hence prolapsus uteri was favoured, or some perineal laceration was imperfectly repaired, the support to the anterior vaginal wall withdrawn; and this, complicated by overstretching of the pelvic floor, began the whole story of prolapsus uteri. There were some 54 cases of varying degree of prolapse in the 400 cases, which might undoubtedly have been reduced in number by greater care and experience. That 37 severe cases of laceration of the cervix were allowed to go untreated and be associated with repeated abortions and metro-endometrial changes was

further proof of the possibility of preventing weeks or months of illness to the mother. Again, the injudicious use of the curette was responsible for quite a number of acute uterine and pelvic conditions. It seemed to be almost a universal rule to curette when in doubt in gynaecological cases. Due regard was not often enough paid to the asepsis of the vaginal and cervical canal.

An interesting discussion followed, in which the Fellows present joined.

STRICTURE OF NASAL DUCT.

A MEETING of the Irish Ophthalmological Society was held in the Royal Victoria Eye and Ear Hospital, Dublin, on March 23rd. There was a good attendance, with the President, Mr. J. B. STORY, in the chair.

Mr. T. O. GRAHAM opened a discussion on stricture of the nasal duct. He said that to overcome epiphora various operations had been devised which had for their object the short-circuiting of the tears directly into the nose from the lacrymal sac. Toti advocated the transplantation of the outer wall of the sac bearing the entrance of the canaliculi into the outer wall of the nose. This he did by external operation. West, however, conceived the idea of attacking the lacrymal sac from the nasal cavity, thus dispensing with the external skin incision. Mr. Graham had adopted West's method and modified it. The operation was most easily carried out under local anaesthesia.

The area on the outer wall of the nose anterior to the middle turbinal is anaesthetized with the local application of 20 per cent. cocaine and adrenaline, or submucous injection of novocain may be employed. With a septum knife or small scalpel the mucous membrane about half an inch square is removed from this area. The underlying bone is then chiselled away, the window in the bone being enlarged by means of nibbling forceps such as Heymann's. In this way the inner wall of the lacrymal sac is exposed and can be invaginated into the nose by passing a probe through the lower canaliculus into the previously cocainized sac. While the probe thus invaginates the inner wall of the sac a vertical incision is made into its anterior surface with a fine-bladed sharp knife. The inner wall of the sac can then be removed with a conchotome. I find it unnecessary to use the special sharp-toothed tenaculum forceps for catching the sac. This completes the operation. The after-treatment consists in irrigating the sac through the canaliculus and preventing the formation of granulations around the artificial opening in the sac.

The difficulties encountered during the operation were enumerated as follows:

1. Thick bone, particularly a prominent sclerosed nasal process of the superior maxilla.
2. An overlying anterior ethmoidal cell which may be opened up. One finds then that two layers of bone have to be removed in order to reach the sac, which lies at the bottom of a recess in the lateral wall of the nose.
3. An enlarged anterior end of the middle turbinal which may require removal.
4. Haemorrhage during the operation. The operation may have to be completed under the sense of touch, a finger pressing into the lacrymal groove externally acting as a guide.
5. A narrow nose; in order to obtain sufficient space for approaching the sac it may be necessary to do a preliminary submucous resection of the nasal septum.

Mr. Graham had endeavoured to ascertain by observation and inquiry letter the end-results of the thirty intranasal dacryocystostomy operations performed by him during the past three years.

Twenty-two were complete successes. Four had lacrymal sac fistula prior to operations: all healed up after the intranasal drainage of the sac. Four wrote to say that they still had epiphora: two, however, admitted improvement; one said there was now only watering of the eye, and no purulent discharge. Four had not replied to the letters of inquiry; two of these patients were, however, free from trouble on leaving Dublin several weeks after the operation. All these thirty cases had been referred to the speaker for operation by ophthalmic surgeons who had carried out conservative treatment without permanent benefit.

Mr. L. J. CURTIN said his experience was not extensive, but the operation seemed to present some difficulties from the operator's point of view. (1) If the nose were narrow it was difficult to orientate properly owing to the lateral view of the site of operation. (2) Sufficient space was not always available for grasping and cutting instruments to be inserted at the same time. These obstacles could be overcome to some extent by performing a high submucous resection of the septum or by following the transseptal route. After-treatment was all-important, and it must be carried out from six to eight weeks following operation, with an occasional visit up to a later period. Granulations needed removal when they made their appearance.

In the discussion which followed the PRESIDENT, Messrs. WERNER, J. A. CRAIG, SMITH, DWYER, JOYCE, MOONEY, CRAWLEY, and MATTHEWS took part, and Mr. GRAHAM replied.

The following cases were shown by members:

Mr. STORY: Calcareous film of the cornea after sympathetic ophthalmia in 1915. Several cases of mucocele and stricture of the nasal duct; some of hypopyon keratitis under treatment.

Mr. WERNER: Case of tumour of pituitary and basilar process of occipital bone region. Case of skin graft.

Mr. CRAWLEY: Case of epiphora.

Miss MAXWELL: Case of lacrymal gland tumour treated by *x* rays and improving. Case of retinitis proliferans.

Mr. W. C. MACFETRIDGE: Case of post-neuritic atrophy of both optic nerves in a young man, attributed to sand-fly fever.

Reviews.

PUBLIC HEALTH AND GENERAL MEDICINE.

IN his foreword to *Practical Preventive Medicine*[1] Dr. MARK F. BOYD, who is professor of bacteriology and preventive medicine in the medical department of the University of Texas, expresses the opinion that the general practitioner is not using to the full the opportunities he has in the field of preventive medicine and public health. To bring home to medical students and practitioners a realization of their public health responsibilities and stimulate co-operation with public health authorities is therefore one of the purposes of his book. In his endeavour to accomplish this purpose he has produced a work of unusual interest and reliability. The general arrangement differs from that usually adopted by writers of public health textbooks, and rightly so in view of those for whom it is intended, though public health students and public health officers will find in it a great deal of useful and precise information of the utmost value, including bibliographical references at the end of each chapter. More than half the volume is devoted to epidemiology; diseases due to invading micro-organisms are dealt with in a manner which cannot fail to be helpful to the practitioner who is desirous of taking his part in the prevention as well as in the cure of disease. Separate sections are allotted to deficiency diseases, occupational diseases, diseases arising from the puerperal state, and diseases transmitted from parent to offspring.

The final chapter gives a succinct account of the public health administration in the United States. In the central or federal administration there is unquestionably a great deal of overlapping, which Dr. Boyd considers can best be remedied by the creation of a single public health department. In some States, such as New York, Massachusetts, and Minnesota, there is efficient administration, but elsewhere it is said to be manifestly inadequate. Local health administration in many parts of the country appears to be subservient to political organizations, though there are many notable exceptions. Dr. Boyd anticipates improvement in this respect by means of propaganda. He refers over and over again to the importance of educating the public in matters of hygiene and sanitation, and expresses the opinion that the avenues of instruction available are "through the press, the movies, pamphlets and circulars, lectures, special conferences and exhibits, and instruction in secondary schools." The value of this work is materially increased by the inclusion in it of a large number of illustrations and diagrams and by a very complete index to its contents.

PSYCHO-ANALYSIS AND THE FAMILY.

THOUGH Mr. FLÜGEL describes his book on the *Psycho-Analytic Study of the Family*[2] as a compilation, the material he has gathered together is presented in a manner indicative of much personal thought and consideration. The author writes with authority as an orthodox exponent of Freud's teaching, and the volume may be recommended to those who wish to obtain a clear understanding of the principles it is intended to teach. Mr. Flügel devotes some attention to views which diverge from his own, and he appears to concede rather more than some of his colleagues to the post-analytic school, notably in respect to the interpretation of symbols.

[1] *Practical Preventive Medicine.* By Mark F. Boyd, M.D., M.S., C.P.H. Philadelphia and London: W. B. Saunders Company. (Med. 8vo, pp. 352; 135 figures. 20s. net.)

[2] *The Psycho-Analytic Study of the Family.* By J. C. Flügel, B.A., Senior Lecturer in the Department of Philosophy and Psychology, University College, London. London, Vienna, and New York: The International Psycho-Analytical Press. No. 3, The International Psycho-Analytical Library. (Roy. 8vo, pp. 259. 10s. 6d. net.)

The social problem considered in this volume—namely, the influence of parents on the mental development of the child—is one of much importance. This influence is possibly somewhat overemphasized at the present time, and insufficient account is taken of inborn "sensitivity," but this is a fault in the right direction, as it concerns circumstances which are capable of being modified; it must be recognized that Freud has done much to extend and formulate our knowledge of the family situation and to draw attention to its significance in relation to the future reaction of the child. At the same time there is much in the Freudian system which arouses opposition, and to which it appears reasonable to adopt an attitude of scepticism. As an instance may be cited the chapter in this volume dealing with ideas of birth and pre-natal life, where Mr. Flügel not only describes coffins, graves, and vaults as all being symbols of the mother's womb, but seriously discusses, and seems to be attracted towards, the highly speculative theory that birth fantasies may be derived from pre-natal impressions and experiences. While such views may be, and frequently have been, criticized on theoretical grounds, certain opinions expressed in this book we regard quite definitely as biologically unsound and socially undesirable. We refer more particularly to the author's discussion on forbidden marriage relationships. Contrasting exogamous communities with modern civilizations, Mr. Flügel points out that there is a tendency for the number of forbidden relationships to become smaller as culture advances. He cites as an instance the recent removal of the ban upon the marriage with a deceased wife's sister. He then proceeds as follows:

"The same result emerges if we consider the matter . . . from the point of view of . . . an enlightened system of morality. The evidence available shows, for instance, that little if any harm is likely to ensue from the marriage of first cousins, so long as the stock is a healthy one: much the same is probably true as regards the marriage of half-brother and half-sister or even full brother and sister. Our condemnation of such unions is due to influences emanating from the repression of the incest tendencies, and not to any sound appreciation or experience of their ill effects; and in so far as the taboos consequent upon repression give way to more balanced moral judgements based on a real understanding of the issues involved, . . . the disapproval of these unions between near kin will be continued only in so far as real dangers are to be apprehended from them. Among such real dangers there may be found the biological one of the possibility of inferior offspring, especially in the case of families with marked hereditary defects, and the psychological one of too little emancipation from all the family influences, with all the consequences that this may involve. As regards this latter, however, it will have to be recognized that complete emancipation will often be beyond the bounds of possibility, and that it is often advisable to permit some degree of indulgence to overstrung unconscious tendencies, so long as this indulgence is not too persistent or too definitely pathological" (p. 229).

It is most difficult to find any justification for such views. There would seem to be no ground for the contention that a more enlightened system of morality would give social sanction to incestuous relationships. On the contrary, such sanctions would seem to be more suggestive of decadence than of progress in any race or community. From a biological point of view we should have thought that experience on the whole was definitely against inbreeding, and in any case cultured people who exhibited a desire for incestuous relationships would certainly tend to be of the psychopathic type and therefore all the more liable to produce degenerate offspring. That this is so is evidenced from the fact that incestuous fantasies so often find expression in the delusions of dementia praecox. Most sociologists will probably prefer to rely on the wisdom of the ages in regard to these matters rather than on conclusions based upon the study of the unconscious needs of the neurotic.

A MANUAL OF FEVERS.

WE welcome the appearance of the second edition of Dr. CLAUDE KER'S excellent *Manual of Fevers*.[3] The work is divided into fifteen chapters: the first two are introductory, and the rest are devoted to a consideration of the diseases usually met with in fever hospitals—namely, measles, rubella, scarlet fever, small-pox, vaccinia, chicken-pox, typhus, enteric fever, diphtheria, erysipelas, whooping-cough, mumps, and cerebro-spinal fever. An account of other diseases which are only occasionally seen in fever hospitals—namely, influenza, poliomyelitis, and encephalitis lethargica—is omitted. Although the work as a whole is a model of what a textbook intended principally for students should be, there are certain details which call for criticism. In the chapter on vaccinia no note is made of the liability of generalized vaccinia to occur when vaccination is performed on a child suffering from a skin disease, especially eczema. This is a serious omission, for neglect of this precaution has been the cause of a certain number of fatal cases. In the chapter on enteric fever no mention is made of the possibility of laboratory infection, several instances of which have lately been recorded. Dr. Ker recommends that antitoxin should not be given in relapses of diphtheria unless the symptoms are very urgent and severe; as a rule, however, the relapse of diphtheria is mild and can often be cured by local treatment only; we are not aware that alarming results of an anaphylactic nature have followed the administration of small doses of antitoxin, but it is a good rule never to exceed 9,000 units when the patient has been sensitized by a previous prophylactic or therapeutic injection. The half-tone photographs of the eruption of scarlet fever, facing p. 74, and of a serum rash, facing p. 262, might well be replaced by colour plates or omitted, as they have no value as illustrations. In spite of these shortcomings, we have no hesitation in warmly recommending the book to medical students, especially those living in London, who can beguile their long journey to and from the fever hospital by a perusal of its pages.

[3] *A Manual of Fevers.* By C. B. Ker, M.D. Second edition. Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1922. (Cr. 8vo, pp. x+334; 15 figures, 6 plates. 12s. 6d. net.)

A SHORT TEXTBOOK OF SURGERY.

THE outstanding feature of Mr. MACEWEN'S *Textbook of Surgery*[4] is that it is small enough to be slipped into a student's overcoat pocket. Yet on its six hundred pages there are more than five hundred illustrations. This achievement (remarkable in these days of ponderous tomes and multiple volumes, and no doubt welcome to the student) is attained by the omission of "fractures and dislocations" in their entirety, and by a reduction in size of the illustrations, which nevertheless upon the whole are good; certainly when good they are useful, having been well chosen from an extensive collection.

An author to be brief must be dogmatic, and Mr. Macewen disarms criticism in his preface, though in fact he need not have much uneasiness on this score. Of course it is easy to take exception to certain statements—as, for example, that "chronic appendicitis is generally due to tubercle." Is it so certain either that "young carcinoma cells, like leucocytes, possess the power of slight independent locomotion," or that "*thus*" (our italics) "they infiltrate the surrounding tissues . . ."? On the other hand, the author is sometimes not dogmatic enough. When does intestinal obstruction "threaten"? And surely there should be an incisive statement about the medical man's duty when it is actually established. Such minor blemishes, however, only throw into relief the general excellence of the teaching, the sound and simple arrangement of the matter, the balanced selection of information. The book cannot fail to be popular with students.

[4] *Textbook of Surgery for Students and Practitioners.* By John A. C. Macewen, M.B., C.M., B.Sc. Glasgow: Maclehose, Jackson, and Co. 1922. (Demy 8vo, pp. 619; 535 figures. 30s. net.)

CHEMISTRY.

THE fourth editions of Mr. A. W. STEWART'S two books on chemistry, *Recent Advances in Physical and Inorganic Chemistry*[5] and *Recent Advances in Organic Chemistry*,[6] may be warmly recommended to the many readers who take an interest in chemical problems and are anxious to know something of the progress made year by year in chemical science. The author writes very clearly, and his pages make no very great demand on the chemical knowledge of their readers, and are free from mathematical abstractions; the subjects he has chosen for discussion in the two volumes are interesting, though naturally not all of them equally so to everybody. They should be of particular interest to all students of chemistry, for they contain answers to many of the questions likely to be set in examination papers. The author's references to some of the many unsolved problems of chemistry will serve a particularly useful function by

[5] *Recent Advances in Physical and Inorganic Chemistry.* By A. W. Stewart, D.Sc.; with an introduction by Sir W. Ramsay, K.C.B., F.R.S. Fourth edition. London and New York: Longmans, Green, and Co. (Demy 8vo, pp. 302; 5 plates, 23 figures. 18s. net.)

[6] *Recent Advances in Organic Chemistry.* By A. W. Stewart, D.Sc.; with an introduction by J. N. Collie, LL.D., F.R.S. Fourth edition. London and New York: Longmans, Green, and Co. (Demy 8vo, pp. 371. 21s. net.)

indicating directions in which research seems most promising or most required. It is no doubt unfortunate for the purchaser that the prices of the fourth editions of books should be about half as big again as those of the third editions, although no material increase in the number of pages has taken place; but presumably the high prices of labour and materials have left the publishers no choice in the matter.

The second volume of the third edition of Professor LEWIS's *System of Physical Chemistry* deals with *Thermodynamics*,[7] and supplies the advanced student and the teacher of chemical physics with a very thorough account of the subject with which it deals. The treatment throughout is of necessity highly mathematical; the subjects discussed are in the main theoretical, although Professor Lewis incorporates what he can of practical and technological chemistry. The book is admirably turned out by the publishers and should be of great service to mathematically minded chemists.

The first volume of the *Introduction to the Chemistry of Plant Products*,[8] by Dr. HAAS and Mr. HILL, sets out to furnish the botanist with an introduction to the chemistry of botany, and the chemist and chemical physiologist with a knowledge of the substances of chemical interest and importance derived from plants. It is divided into ten sections dealing with the different classes of chemical compounds or agents—fats, carbohydrates, glucosides, tannins, pigments, enzymes, and so forth—met with in the vegetable kingdom. The book contains a deal of information not previously collected together, and should be of service to botanists, physiologists, and chemists alike.

Dr. CUSHMAN'S *Chemistry and Civilization*[9] consists of six discursive chapters in which the author, regarding the science from different points of view, endeavours to set out the main facts about it that should appeal to the man in the street. His treatment is largely historical, but besides delving into the past the author looks forward to the future. The book is meant for readers who know nothing of chemistry as well as for those who have a little knowledge of it, and should prove interesting to both parties.

Professor COPAUX'S *Introduction to General Chemistry*,[10] translated by Dr. LEFFMANN, is a short and well-written account of the subject meant for intelligent students of chemistry, and not demanding (as do so many such introductions) any great knowledge of mathematics. The metal called glucinum by the French is properly referred to as beryllium in English, a point which may have escaped the translator.

The second and enlarged edition of Mr. KINGZETT'S *Popular Chemical Dictionary*[11] may be recommended to the vast class of general readers who want a book in which they can look up the meaning of the chemical terms or names of chemical substances so commonly met with in everyday books and papers. We have nothing but praise for this dictionary, which fills a long-felt want and should help in stimulating the man in the street to take an interest in chemical science and technology. It is well printed, and in general remarkably accurate; the "mustard gas" mentioned on page 221 is more properly called dichlordiethyl sulphide.

The application of the electronic theory of matter to the problems of chemical constitution made in Professor FRY'S *Electronic Conception of Valence and the Constitution of Benzene*[12] is a highly interesting study for chemists. The author seeks to establish a new type of structural chemical formula, the "electronic formula"; he adds to the already long list a new structural formula for benzene, C_6H_6, that goes farther in explaining graphically the chemistry of the benzene ring than any of its predecessors. The book shou'd be read by all who are interested in the foundations of chemical science.

[7] *A System of Physical Chemistry.* In three volumes By W. C. McC. Lewis, M.A. R.U.I., D.Sc.Liverp. Vol. II: *Thermodynamics.* Third edition. London: Longmans, Green, and Co. (Demy 8vo, pp. 451; 56 figures. 15s. net.)

[8] *An Introduction to the Chemistry of Plant Products.* By P. Haas, D.Sc., Ph.D., and T. G. Hill, A.R.C.S., F.L.S. Vol. I: *On the Nature and Significance of the Commoner Organic Compounds of Plants.* Third edition. London and New York: Longmans, Green, and Co. (Demy 8vo, pp. 427. 16s. net.)

[9] *Chemistry and Civilization.* By A. S. Cushman, A M., Ph.D. Edinburgh: E. and S. Livingstone (Demy 8vo, pp. 151; illustrated. 15s. net.)

[10] *Introduction to General Chemistry: An Exposition of the Principles of Modern Chemistry.* By H. Copaux; translated by H. Leffmann, A.M., M.D. Philadelphia: P. Blakiston's Sons and Co. (Cr. 8vo, pp. 201; 30 figures. $2.00 dols. net.)

[11] *The Popular Chemical Dictionary: A Compendious Encyclopaedia.* By C. T. Kingzett, F.I.C., F.C.S. Second edition. London: Baillière, Tindall, and Cox. (Demy 8vo, pp. viii + 539; illustrated. 21s. net.)

[12] *Electronic Conception of Valence and the Constitution of Benzene.* By H. S. Fry, Ph.D. London and New York: Longmans, Green, and Co. (Demy 8vo, pp. 318. 16s. net.)

NOTES ON BOOKS.

THE ninth edition of Professor Dr. MAX JOSEPH'S well-known *Lehrbuch der Hautkrankheiten*[13] is smaller than its predecessors. Owing to economic conditions the author states that he has been compelled to reduce its size as much as possible in order to prevent the price being so great as to make it unsaleable. As it is, the price quoted for bound copies for export is M. 130 in Germany, a considerable sum, but at the current rate of exchange a very small fraction of a pound note. Considering the size of the book (only 258 pages of text) it is remarkably complete, and the author claims that all important advances have been included in it. We do not, however, notice any mention of the work lately done on the subject of protein therapy in its possible applications to dermatological problems. This is a promising field of research, and although up to the present no startling developments have taken place, something should have been said about it. The classification adopted is mainly pathological, and is founded on a combination of those of Hebra and Auspitz; it is fairly convenient, but of course, like all other systems, is open to objection. The book is well illustrated in black and white; a large proportion of the figures are of microscopic slides and principally of pathological interest—in fact, the book is strongest on the pathological side. While acknowledging that this is a sound textbook of dermatology, although perhaps too much compressed, there is no reason to recommend it to the British student or practitioner in preference to the several excellent works lately published in his own language.

Readings in Evolution, Genetics, and Eugenics,[14] compiled by Professor NEWMAN of Chicago, is a book of composite authorship in which the attempt is made to give an account of evolutionary biology in all its phases. Many of its chapters are taken from the works of other writers, Professor Newman being responsible for the nexal pages or chapters. It is divided into five parts, of which the first two deal with such subjects as the history and development of our views on organic evolution, and the evidences for its existence as derived from palaeontology, geographical distribution, classification, morphology, and the like. The third part discusses the causal factors of organic evolution, and is naturally mainly concerned with Darwin's work and the modifications of his views that have been approved or suggested. Part four is given to genetics, variation, biometry, and Mendel's laws of heredity; part five to eugenics and euthenics, which may be defined as the sciences of being born well and of learning to live well. The book is well arranged, and Professor Newman is to be congratulated upon the skill with which he has welded his material into a consecutive whole. It is designed for university students of biology and evolution, and has been written to fill a want said to have been long felt in America.

The official report of the Conference held last January between Commissioners of the Board of Control and medical superintendents and chairmen of mental hospitals has been published, as a pamphlet of 120 pages, by H.M. Stationery Office, at the price of 2s. 6d. The purpose of the Conference was to consider in what directions lunacy administration and the treatment of persons suffering from mental disease may be improved. The Conference was convened by Sir Frederick Willis, Chairman of the Board, and opened by Sir Alfred Mond, Minister of Health. An account of the proceedings appeared in our columns at the time.

Dr. JOHN P. TURNER has produced a rather trivial little book entitled *Ringworm and its Successful Treatment*.[15] He claims to be able to cure this obstinate complaint by successive applications of tincture of iodine, oil of cade, ammoniated mercury, and resorcin, in a time varying from a fortnight to thirty weeks. *X* rays find no place in his system of therapy.

[13] *Lehrbuch der Hautkrankheiten für Ärzte und Studierende.* By Professor Dr. Max Joseph. Ninth edition. Leipzig: G. Thieme. 1922. (Roy. 8vo. pp. 253; 2 plates, 63 figures. M. 130.)

[14] *Readings in Evolution, Genetics, and Eugenics.* By H. H. Newman, Professor of Zoology in the University of Chicago. Chicago, Ill.: The University of Chicago Press. 1921. (Med. 8vo, pp. xviii+523; 101 figures. 3.75 dols.)

[15] *Ringworm and its Successful Treatment.* By John P. Turner, M.D. Philadelphia: F. A. Davis Company. 1921. (Cr. 8vo, pp. 62; 8 figures. 1 dollar net.)

MEDICINAL AND DIETETIC PREPARATIONS.

Diabetic Flour for Bread-making.

WE have received from Messrs. Allen and Hanbury (37, Lombard Street, London, E.C.3) a specimen of a new diabetic flour, which they have prepared in response to certain suggestions made at a discussion on the treatment of diabetes at the Medical Society of London.

In this discussion[1] Dr. E. I. Spriggs pointed out that although the diabetic flours prepared by firms of repute were satisfactory, in that the results of analysis agreed with the manufacturers' claims, nevertheless most of these breads contained an undesirable amount of fat. He recommended a bread made from casein and white of egg, and gave directions for its preparation.

Messrs. Allen and Hanbury have prepared a flour from a mixture of casein and lactalbumin, with the addition of leavening agents—namely, cream of tartar and sodium bicarbonate. This flour, with the addition of white of egg, makes a bread essentially similar to that described by Dr. Spriggs, and the patient is saved the serious inconvenience of preparing casein from skimmed milk in his own home.

The special advantages claimed for the flour are that it contains a vanishingly small amount of carbohydrate and no fat, and that a palatable bread can easily be made from the flour. Analysis shows that the flour contained no fat and not more than 1 per cent. of carbohydrate, which latter consists only of lactose. The protein amounts to 73 per cent. of the whole flour. Two ounces of the diabetic flour mixed with the white of two eggs and baked gave a palatable loaf which possessed good keeping qualities. The preparation and cooking can be performed with ease and require no greater skill than any ordinary culinary operation. The directions on the box state that one packet is to be mixed with three eggs. This mixture gives a satisfactory product on baking, but of course the yolks of the eggs provide a considerable amount of fat. The yolk of a hen's egg contains about 5 grams (75 grains) of fat; if a fat-free bread is desired only the whites of eggs should be used.

The analysis and tests show therefore that the flour is a thoroughly satisfactory diabetic preparation; it should prove of great value to clinicians who are desirous of reducing to a minimum the fat as well as the carbohydrate in the diet of their patients.

THE PHYSIOLOGY OF LIFE ON THE ANDES.

SOME account of the recent expedition to the Andes for the purpose of physiological investigation of life at high altitudes was given at a meeting of the Chelsea Clinical Society on April 11th by Mr. JOSEPH BARCROFT, F.R.S., Reader in Physiology at Cambridge University.

The expedition was arranged originally by the Royal Society, which appointed a committee to supervise it. It was supported financially by the Presbyterian Hospital, New York, Harvard Medical School, the Rockefeller Institute, the University of Toronto, the Carnegie Fund, and the Moray Fund of Edinburgh; it also received substantial subscriptions from Sir Robert Hadfield and Sir Peter Mackie. The expedition was also greatly helped by the facilities afforded by the Peruvian Corporation, Limited, and the Cerro de Pasco Copper Corporation, as well as by the Pacific Steam Navigation Company and the Grace Line.

A Mountain Laboratory.

The members of the expedition, in addition to the leader, Mr. Barcroft, were Professor J. C. Meakins of Edinburgh, Mr. Doggart of Cambridge, Dr. Redfeld and Dr. Forbes of Harvard, Dr. Bock of Massachusetts General Hospital, Dr. Harrop of the Presbyterian Hospital, New York, and Dr. Binger of the Rockefeller Institute. The British contingent sailed on November 17th last to find, on arriving at Callao, the Peruvian port, that the American contingent had already been there a fortnight and had spent the time in preparing a laboratory in the shape of a luggage van 45 ft. in length, excellently adapted to this new use. The Central Railway of Peru attains a height of 15,880 ft., which is about 100 ft. higher than Mont Blanc, so that up to this altitude the party had at its disposal an excellent mobile laboratory, electric light and power, and plenty of water.

Mr. Barcroft said that the greatest advantage which the Andes presented as a field for high altitude research was the fact that there was a native population living under these alpine conditions. So far as one could judge, the race had lived here for many generations, going back to a time before the occupation not only of the Spaniards but of the Incas. These people lived at a barometric pressure of somewhere about 450 mm. of mercury, or a little over half the normal height. The town of Cerro de Pasco, which was situated at a height of 14,000 ft., was the third largest in Peru, and had been the centre of a mining industry for hundreds of years. In addition to the native population there was another population, consisting of the mining engineers and executive staff of the copper corporation, who offered themselves very willingly as subjects for experiment.

Effects of High Altitude.

The members of the expedition suffered from mountain sickness in varying degrees. None of them slept well; some had short hours of sleep, and others, while sleeping the allotted hours, had fitful and broken rest. At the end of a month all of them were mentally quite exhausted. It was clear, however, from the activities of the mining staff, that a fair amount of mental work could be sustained for long periods at 14,000 ft., but with regard to muscular work there were evident limitations to the effort even of the most acclimatized. In some respects it was surprising how much exercise could be taken. Dancing and lawn tennis were possible so long as the exercise took place on the flat, but on even the gentlest gradient the limitation which the low barometric pressure placed on the powers was obvious. The natives could perform some remarkable feats, even to carrying 100 lb. of ore on the back from a mine 250 ft. deep, but this was only done with frequent pauses, due to the necessity of squaring the oxygen account.

The facial appearance under these conditions underwent considerable change, especially in colour. Many of the natives were sallow, but those who were ruddy had cheeks which were purplish rather than pink. One of the mining engineers had an unusually fresh complexion, but not until the party saw him at sea-level subsequently did they discover that it was pink rather than purple. The actual colour of the arterial blood bore out this observation. If taken from the radial or brachial arteries, without exposure to air, the blood appeared to be venous in character, and was, in point of fact, usually about 85 per cent. saturated with oxygen, or, as the Americans said, 15 per cent. unsaturated. The lips and nails of the visitors were obviously cyanosed on arrival, and this cyanosis, although it decreased, never entirely went away. Another interesting physical sign, which was often seen, though not present in the majority of the natives, was clubbing of the fingers, and several cases were examined in which this condition was found to be unassociated with any cardiac or pulmonary lesions such as might be suspected if the appearance was met with at sea-level. The shape of the chest, as indicated by *x*-ray photographs, showed that the sternum was carried in an elevated position, and the ribs were more horizontal than in the case of normal people. This was true both of the American engineers and of the native population, but during the month of the party's stay none of the members acquired the habit of carrying the chest distended.

Blood Changes.

The red blood corpuscles were found to be increased in numbers, up to between 6,000,000 and 7,000,000 in members of the party, while among the residents counts up to 8,000,000 were made, with corresponding increase in the haemoglobin. There was also a marked rise in the reticulated red blood corpuscles observed among members of the party on arrival, and a corresponding fall subsequent to the descent. No nucleated red blood corpuscles were seen. The chemical changes in the blood were also of considerable interest, but in a general way they suggested that the blood acquired its oxygen more easily at high altitudes than at sea-level.

Altogether, it was clear that life could be carried on in a comparatively satisfactory manner without the production of gross permanent disabilities, consistently with the degree of unsaturation of the blood already described, for no member of the party suffered from this stay in the heights of the Andes, and Mr. Barcroft believed that there was no suffering among the mining community, at all events during the first five decades of life.

[1] BRITISH MEDICAL JOURNAL, 1921, vol. ii, p. 705.

NINETIETH ANNUAL MEETING
of the
British Medical Association,
GLASGOW, 1922.

THE ninetieth Annual Meeting of the British Medical Association will be held at Glasgow this summer, under the presidency of Sir William Macewen, LL.D., F.R.S., Professor of Surgery in the University, who will deliver his Address to the Association on the evening of Tuesday, July 25th. The sectional meetings for scientific and clinical work will be held as usual on the three following days, the mornings being given up to papers and discussions and the afternoons to clinical and laboratory demonstrations. The University Court has granted the use of the University buildings for the scientific and other purposes of the meeting. The Annual Representative Meeting will begin on the previous Friday, July 21st. The provisional programme for the scientific work of the meeting is being drawn up by the officers of the various Sections, whose names were printed in the SUPPLEMENT of February 18th, 1922, p. 39; and brief announcements of the sectional arrangements, as these are made, appear from time to time in the JOURNAL.

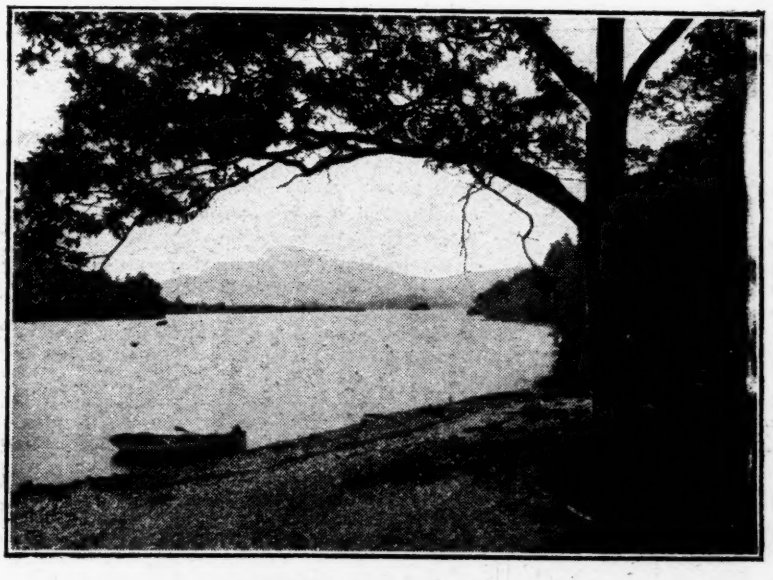
The last day of the meeting, Saturday, July 29th, in accordance with the custom of previous Annual Meetings, has been set apart for excursions to places of interest in Glasgow and the neighbouring West Highlands. The article published below (the fourth of the series) gives a preliminary sketch of the neighbourhood of Glasgow. Further descriptive notes will be published in subsequent issues. A note on the accommodation for visitors at Glasgow was printed in last week's SUPPLEMENT.

GLASGOW AND ITS NEIGHBOURHOOD.*

IT has been said that among the great advantages enjoyed by the city of Glasgow none ranks ahead of the satisfying knowledge that immediately beyond the municipal boundaries lies a countryside of unparalleled enchantment. Sometimes it is suggested that the charm of Glasgow is that "it is so easy to get out of it," and, while that statement may seem to imply a reproach, it is in reality a compliment. Visitors to the Annual Meeting of the British Medical Association in July will, undoubtedly, be impressed by the facilities afforded for learning something of the city's environment.

Custom has decreed that every city through its local historians, its archæologists, geologists, botanists, or guide-book chroniclers must make the most of the situation in which it is placed, and, if evidence of interesting features be not clear of itself, it must be suitably treated by skilful writers—usually enthusiasts in their subject—to make it attractive. But in Glasgow visitors readily discover that any policeman on point duty will tell them where to board a tramcar that with only one change *en route* runs to "the bonnie bonnie banks o' Loch Lomond," the Queen of Scottish lakes; and, while a journey by train may be quicker (and better advised), still the fact remains that the city tramlines are a link between the busy streets and the solitudes of the Highlands.

"Westward ho!" has a significance in Glasgow as a slogan for travellers. One can almost hear it sounding in the air of a summer morning when the tourists trek to the Broomielaw, where a part of the magnificent fleet of river steamers is ever in waiting to convey all who will to the lands of desire that border the glorious Firth of Clyde. The very hoardings one passes on the way to the University proclaim, with picturesque insistence, how easy it is to reach "the land o' Burns," the Trossachs, the castle towns of Dumbarton, Stirling, Edinburgh, the famous golf courses of Prestwick, Turnberry, and, probably most wonderful of all, the unequalled inland course at Gleneagles. Many visitors are inspired to travel by the pictorial suggestion of posters that tell now of the beauties of the Kyles of Bute on the Isle of Arran; of Rothesay (the "Madeira of Scotland"); of the green uplands of Lanarkshire, the sylvan beauties of the Bridge of Allan and Dunblane district; of the romantic appeal of Aberfoyle, Loch Ard, and the Lake of Menteith. Nor may one omit the attractions of Inveraray, the home of the Argylls, or the wonders of those railroad tracks—the West Highland and Callander and Oban lines—that convey one through country of magnificent beauty.



LOCH LOMOND FROM INCH TAVANAGH.
(Photograph by T. and R. Annan and Sons.)

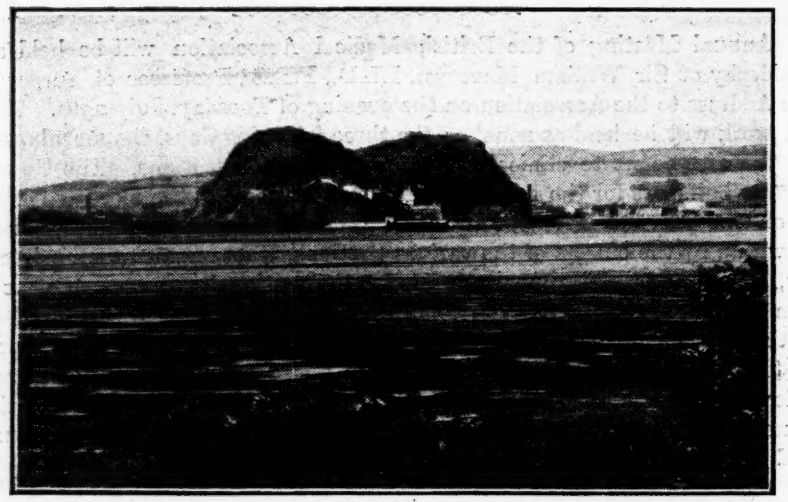
Glasgow is the centre from which in the season the tourist traffic radiates to all these points, that in the broadest sense are the city's environment, for from no centre are they more easily reached by rail, by road, or by river. The Glasgow schoolboy was not so far out when he wrote "the wonderful thing about Glasgow's environment is that it is nearer the city than the environment of any other place."

The Isle of Arran.

It were impossible within the limits of this brief article to envisage the whole, and it may be well to choose items of interest on the same principle as one might make choice from an enticing menu. The Isle of Arran has been mentioned. Geologists will find it unique. The island has gained the repute of epitomizing the geological history of both the Highlands and the Lowlands of Scotland. There are folded and contorted Highland schists, the strata of Old Red Sandstone, Carboniferous, and Triassic Ages, and indication of the Chalk of Lower Lias. Then again there are evidences

* Previous articles, on the City and University of Glasgow, have appeared in the BRITISH MEDICAL JOURNAL of December 3rd, 1921, p. 961, January 7th, 1922, p. 29, and February 11th, 1922, p. 242.

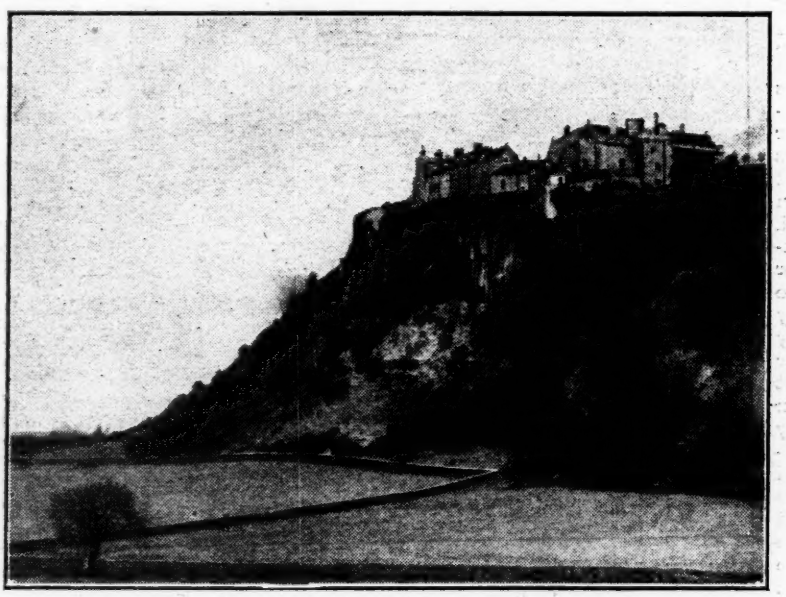
everywhere of volcanic action, while the glacial epoch has also left its marks in perched blocks, erratic boulders, ice-worn rock surfaces, moraines, and traces of glacial lakes. Raised sea-beaches, indicating periods of land upheaval, are readily traced, and there are caves formed by the action of the sea waves in ancient cliffs now far beyond the reach of the sea. Arran is also of supreme interest to botanists, possessing as it does a rich flora and fauna. One botanist declares that in a single month (August) he noted upwards of three hundred flowering plants, including some alpines, and a profusion of mosses, ferns, liverworts, and seaweeds. The marine zoologist finds scope, too, in Arran for study in rock pools, and is well rewarded if his energies are directed to dredging off shore.



DUMBARTON ROCK ON THE CLYDE
(Photograph by T. and R. Annan and Sons.)

Millport Marine Biological Station.

Mention of marine zoology naturally suggests the proximity to Arran and Ayrshire of the Cumbraes and the Marine Biological Station at Millport. The romantic associations of the Burns Country and the "auld Brig o' Doon," the cottage where Burns was born, and the Memorial Gardens with their impressive monument, may appeal to many; yet, of more practical interest at the moment, the Marine Station will draw many visitors to Millport. The station owes its origin to the late Dr. Robertson, "the Cumbrae Naturalist," who died in 1897, and to the late Sir John Murray, of the famous *Challenger* expedition. Its genesis was an old canal boat used as a laboratory, and known as "The Ark." Ultimately an association was formed and the present buildings were erected from the funds. Large additions have been made to it from time to time, and its equipment has been greatly improved. It was established on its present basis in 1901, and has for its object the investigation of the marine flora and fauna of the district known as the Clyde sea area and the fostering and encouragement of biological research. The equipment includes laboratories with a very complete collection of microscopical and physiological apparatus, a museum for the preservation and exhibition of specimens, a valuable reference library, and an aquarium with a special system of tanks for research work.



STIRLING CASTLE.
(Photograph by T. and R. Annan and Sons.)

Blantyre.

So far our random choice has taken us to Arran, to Ayr, and to the Cumbraes; it may now be applied to find for us other interests to intrigue the fancy or inclination of the moment we are at present anticipating. The Medical Faculty of Glasgow is proud of the memory of one of its earliest members, the late Dr. Livingstone. His birthplace, Blantyre, is distant from the city some few miles. There he worked in a cotton-mill until ambition and zeal for foreign missionary work fired his imagination. Something of the strength of his Scottish character and determination is realized in the tale told that to pursue his studies he had to walk from Blantyre daily to the old cottage in the High Street. The activities of the coal-mining industry have sullied somewhat the one-time beautiful district in which he first saw the light, but many visitors still find their way to the early home of our greatest medical missionary, and if industrialism has shorn the pilgrims' shrine of something of its early simplicity, the memory of the intrepid explorer is still cherished and adds its lustre to the village of his birth.

Birthplace of the Hunters.

In rural proximity to Glasgow, at East Kilbride, there is the birthplace of John and William Hunter. The former was surgeon to St. George's Hospital and Surgeon-Extraordinary to the King; an investigator in the sciences of anatomy, physiology, and pathology; and originator of the museum that is now the property of the Royal College of Surgeons of England. The latter, a great obstetrical surgeon also, was founder of the Hunterian Museum at Glasgow University, regarding which a special article will appear in our columns later. The Hunters were born at Long Calderwood, East Kilbride, about seven miles distant from the city. "It is not known to a tithe of the men you meet," writes one of their biographers, "that a small Scottish farmer, who more than a century ago tilled the soil within a very few miles of Glasgow, had two sons who raised themselves to the very highest position possible for men to reach in connexion with science, and the profession which they adorned; and not only so, but conferred blessings of a priceless, imperishable kind on the whole human race." To the old home of the Hunters many may wish to pay a visit, and will find that, while the surroundings may have taken on the touch of modernity, something of the old-world charm still remains.

Opportunity to say something regarding other centres of interest mentioned in the preliminary survey in this article will occur later. It may be mentioned, however, that Stirling and Dumbarton Castle can be reached by motor in an evening run. So also may Aberfoyle and the Lake of Menteith. An hour's journey by train takes one from Glasgow to Edinburgh, and in other regards the three railway companies serving Glasgow arrange their time-tables to suit connexions with the river steamers and ensure pleasant and undelayed transit to all parts of Scotland. In that, as in so many other respects, Glasgow is ideally situated for the holding of a conference.

British Medical Journal.

SATURDAY, APRIL 22ND, 1922.

PUBLIC ASYLUMS AND MENTAL HOSPITALS.

A NUMBER of recommendations in regard to the administration of asylums are made in a recent report by the Quaker Medical Society.[1] The report is perhaps all the more valuable as its writers show themselves to be deeply impressed by the difficulties inherent in the whole question, and it is written in "a Quaker spirit with a genuine desire to help." Naturally some of the suggestions are similar to those which have been made from other sources. It is recognized that certain of the present difficulties are due to the antiquated premises in which the staff of a number of asylums have to carry on their work, and it is suggested that a levelling-up process is necessary to bring these institutions into line with the more modern. Reference is made to the grouping of cases on sociological lines, and to the need of an improvement in the daily lot of those who are capable of responding to their environment. The latter aim may, it is suggested, be attained by a more varied supply of literature and games, by the organization of simple hobbies and handicrafts, and by habit training, re-education, encouragement of initiative, and a more varied dietary. A great deal is done, of course, in these directions in most asylums, and occupation-therapy forms part of the routine treatment in all these institutions. Yet it is doubtful if the possibilities of rehabilitation in the insane have hitherto been completely explored.

Much may often be done for apparently grossly deteriorated cases, but a certain attitude of pessimism is apt to arise in work which makes severe demands on doctors and nurses, and which is attended with a great deal of difficulty and discouragement. The apathy which is apt to invade these institutions is easily to be understood in view of the almost complete isolation, in some instances, from the outside world. This tendency would be largely counteracted if the public took a more intelligent and sympathetic interest in the patients in these hospitals. It is suggested in this report that regular visits from social workers to teach simple hobbies and handicrafts, as well as to help those of literary and intellectual tastes, on the lines of similar voluntary helpers' work in military hospitals during the war, would help a good deal. With this we are in entire agreement, because at present the patient who is sent to the asylum is, apart from his relatives, shunned by society, and it is seldom indeed that he is even visited by the clergyman of the parish to which he belongs. Often the lot of the patient who has recovered from an episode of insanity is one of considerable stress, and it is difficult for him to resume his place in the outside world. The public regard him with timidity, and employment is not always easy to obtain. If it were not for the existence of a Mental After-Care Association—an organization which, as we had occasion to show the other day, does much useful work for the asylum patient—there would be no alternative but the workhouse for a number of recovered cases. It is pointed out in this report that after-care welfare work amongst patients is still greatly needed, and this might be undertaken by trained psychiatric social workers, as has been done in America under the stimulating influence of the National Committee for Mental Hygiene.

[1] *The Friend*, February 17th, 1922.

A plea is made for a broader outlook in regard to mental cases on the legislative and administrative side. Reference is made to the fact that the supervision of the Board of Control is largely advisory, and that the Board has little authority over visiting committees, which may grow perfunctory in the discharge of their duties and conservative in outlook, whilst still fulfilling their legal obligations. The suggestion that visiting committees should be empowered to appoint suitable lay visitors, not necessarily from amongst their own members, to visit patients in mental hospitals frequently and freely, has much to commend it.

While we are entirely in sympathy with a more enlightened policy in regard to the treatment of mental disorder as a whole, it is well to remember that mental disease cannot always be dealt with on exactly the same lines as physical disease, since it tends to find expression in definitely abnormal conduct. Hence insanity must always of necessity involve legal and civil considerations, as well as medical. The legislative side of mental disorder is summarized in this report as follows: (1) The safeguarding of the individual against wrongful incarceration; (2) the protection of the insane patient against self-inflicted injury and ill treatment by others; (3) the protection of the public against the dangerous lunatic; (4) the defining of the civil status of the lunatic. In spite of a number of recent statements as to improper detention, we believe the mechanism at the command of the Board of Control is adequate to prevent its occurrence. Rather may there be an increasing tendency to withhold the protection of certification in certain cases where it is desirable and necessary. It must not be forgotten that, quite apart from seriously anti-social acts, the psychopathic personality is apt to exert a most unfavourable influence upon his wife and family, and his isolation may be necessary for the sake of others, just as in the case of infectious diseases. There still is such a disorder as insanity, and to give the paranoiac the label of "neurasthenia" does not render him a less dangerous element in society. A balanced attitude towards the whole question of mental disorder is particularly necessary at the present time; whatever may be done in the way of internal reform in asylums, these institutions will always be viewed by the public with a certain fear, suspicion, and dislike. Insanity will always be one of the maladies the most dreaded, and this dread will inevitably tend to express itself by some measure of antagonism to those who are responsible for the care of the insane.

MINERS' NYSTAGMUS.

THE Medical Research Council, at the request of the Home Office, appointed in 1920 a special committee to investigate the causation and means of prevention of miners' nystagmus. The members of the committee are Professor J. S. Haldane, M.D., F.R.S. (chairman), Professor E. L. Collis, M.D., T. Lister Llewellyn, M.D. (secretary), G. H. Pooley, F.R.C.S., and W. H. R. Rivers, M.D., F.R.S. The committee has issued its first report;[1] this comprises a summary of its primary conclusions, a general report on the disease by Dr. Lister Llewellyn, and a report by Dr. Rivers on psycho-neurotic symptoms associated with the disease.

Miners' nystagmus is a disease of comparatively late discovery. The earliest reference known is one by C. Turner Thackrah in a book published in London in 1832. He wrote of colliers: "Their eyes, from swelling of the lids, appear small, are affected with chronic inflammation and intolerance of full light, and many, after a few years' trial, are obliged, by the injury which their

[1] Special Report Series, No. 65, Privy Council Medical Research Council. First Report of the Miners' Nystagmus Committee. London: H.M. Stationery Office. 1922. Pp. 64. Price 1s. 6d. net.

health has sustained, and especially the weakness of their eyes, to leave the mine." Dr. Gillet of Sheffield is said to have recognized the disease in 1854. The first detailed record of a case was made by Decondé, a Belgian doctor, in 1861, in a paper dealing with nystagmus generally. In 1875 C. Bell Taylor of Nottingham published a paper on "Miners' nystagmus, a new disease," in which he held the condition to be due to the overburdening of the eye muscles and to the sustained effort to see in a deficient light. Thereafter many observations on the disease were published and a variety of conditions were assigned to its production—for instance, work in a strained position, poisoning by coal gases, and labyrinthine disturbance. Two workers—Romiée of Belgium and Josiah Court of this country—have consistently maintained that deficient light was the essential factor in the production of the disease. Opinion is now generally in favour of this view, and the finding of the committee is completely in favour of it. The modern teaching is that the disease is either a general fatigue of the whole oculo-motor system or a general neurosis with special local manifestations in the oculo-motor apparatus.

The disease was added to the schedule of industrial diseases in the Workmen's Compensation Act of 1906. At first "nystagmus" was given as the specific symptom of the disease; but in 1913 a wider definition was drawn up—"the disease known as miners' nystagmus, whether occurring in miners or others, and whether the symptom of oscillation of the eyeballs be present or not." With the wider definition the number of cases receiving compensation has risen rapidly. In 1920 no fewer than 2,865 new cases were certified, making a total of 7,028, receiving compensation to the amount of £300,000 per annum on an employment roll of 978,000. It may be taken that the total incapacity rate in the United Kingdom, France, Belgium, and Germany is 0.2 per cent. of men employed underground, but the number of those who show nystagmus on examination is much higher, varying from 5 to 35 per cent. in different districts. It is calculated that the total economic loss to this country alone from this one disease is one million sterling a year.

The first and most general subjective symptom is failure of sight, which is most marked at night-time, especially in the dark winter months. The worker cannot perform the more skilled part of his work, he fails to find his tools, walking underground is difficult, the movements of his comrades' lamps annoy him, he may become irritable or quarrelsome, and his bad work may lead to further trouble. As the disease progresses sleep is broken by headaches and dreams, there is giddiness on exertion and dread of light. Later, after prolonged absence from work, well-marked neurotic and even hysterical symptoms may appear. Some men after failure are able to work at once on the surface, but most require complete rest. Total incapacity may last from one to twelve months, after which time there is ability to do almost any surface work. A few extreme cases never completely recover: these men are unable to do any colliery work again. It is observed that with the beginnings of recovery the earlier the man starts surface work the better is the prognosis. A considerable body of evidence was found indicating that the attention paid to the disease, and "compensation," have increased the frequency with which claims are made. "The increase of the number of cases of nystagmus is probably more due to the new consciousness that men were suffering from it than to any real increase." Dr. Rivers puts it thus: "It is quite certain that compensation has not increased the prevalence of nystagmus in the strict sense. It is solely through its action upon the psychical and psycho-neurotic aspects of the disorder that the increased frequency of disability has come about." When a man's attention is called to his trouble, a mild or latent attack may be converted into the manifest variety. "It would be quite possible to 'infect' a pit, hitherto free from certified cases of nystagmus, by the introduction of a few bad cases." Stoppages of work bring out numbers of cases—men who have carried on successfully when out of work claim half-pay on their disability. Duration of compensation is to some extent influenced by methods of compensation; in one district a high incidence, low rate of return to work, and a high cost of each case, is related to a practice of lump-sum settlement: "it is quite common for men to return to work underground after such a settlement."

There is clear evidence that deficiency of light during work at the coal face is the essential cause of the disease. It is found in all classes of coal mines, and in ironstone mines where, on account of the presence of thin coal seams, safety lamps are employed. It is very uncommon in the purely naked-light mines—for example, those of Somerset and the Forest of Dean. It is common on the Continent, where safety lamps are almost universally used. It is very uncommon in America, where open lights and electric cap lamps are used. The badness of the light in the mines was demonstrated by Llewellyn in 1912; he made a large number of observations, and found that the average illumination at the coal face in safety-lamp pits was 0.018 of a foot-candle, and in candle pits 0.09. (The standard artificial lighting for schools at the child's desk is 2.5 foot-candles.) The bad light in mines is due to the feebleness of the illumination—whether lamp or electric—the rapid fouling of its protecting gauze or glass, the distance from the working point, and the high degree of absorption of light by the surrounding blackness of the coal. A lowered percentage of oxygen, the presence of moisture, and the coal dust in the air all lower the feeble light of the safety lamp. Professor Haldane examined the possibility of the disease being due to the gases abnormally present in the air of the mines. Excess of CO_2 and deficiency of oxygen could not be responsible, for these are found to a greater extent in naked-light pits, where nystagmus is practically absent. Firedamp was found experimentally to have no more physiological action than the nitrogen normally present in air. Minute traces of carbon monoxide—about 0.005 per cent.—are present, a much too low proportion to cause any appreciable physiological effects. Professor Haldane writes: "We may therefore conclude with complete certainty that the abnormal constituents in ordinary mine air have nothing to do with the production of miners' nystagmus."

The influence of alcohol was investigated and discounted. Accidents, shock, and acute illness increase liability to the disease. Hereditary predisposition, if any, is small and probably acts where there are congenital ocular defects. Errors of refraction are so common amongst the general population that their influence is difficult to determine; correction of these errors gives relief to symptoms, but may not check the oscillations. Rest from pit work and surface employment are the only known means of treatment; medicinal treatment, except that directed to the general health of the patient, is of little avail. Dark glasses delay recovery. No man loses his sight from the nystagmus, and it is the first duty of the doctor to assure his patient that the disease is curable, for nothing is so certain to re-establish the man's confidence in himself. "To tell a collier that he should never go down a pit again is almost to pass a sentence of industrial death upon him." Early employment on the surface plays as great a part in the treatment of the disease as work underground does in its production. Unfortunately, compensation arrangements check surface employment; it does not pay.

The committee unanimously agree that: (1) The essential factor in the production of miners' nystagmus

is deficient illumination, other factors have no direct influence on the disease; (2) the deficient illumination is due to the low illuminating power of the safety lamps generally used by coal miners; (3) workers at the coal face are more affected than other underground workers, and this appears to be due to the unrelieved blackness of the coal and the greater need for accurate vision; (4) distinct signs of nystagmus are present in a large proportion of coal miners, though only in a small proportion do the symptoms ever become so severe as to cause even temporary incapacity for work underground. The committee recommends that the standard of illumination should be improved to at least an equality with open-light pits, by the use of the electric cap lamp or other method which brings the light nearer the working area without shining directly into the eyes, and by an increase of whitewashing and stone dusting. It believes that by the application of these remedies miners' nystagmus of sufficient severity to cause disablement can, by degrees, be entirely prevented. Lastly, it recommends that both workman and employer be granted power to appeal to the medical referee, at intervals of not less than six months from the original certificate of disablement or date of last appeal, to assess the incapacity present. In this appeal the medical referee should certify that the man is: (1) totally incapacitated; or (2) partially incapacitated—(*a*) fit for surface work, (*b*) fit for suitable work below ground; or (3) not incapacitated.

Further investigations are in progress into the causation of the disease and into the operation underground of remedial measures, with a view to assisting the introduction and trial of new methods. This first report of the committee is sure to be received with the greatest interest by all those who have to do with the mines and the miners. It is well written, with a sufficiency of detail to establish every statement, yet it is commendably brief. The committee is to be congratulated on its work.

SCIENTIFIC SECTIONS AT THE GLASGOW ANNUAL MEETING.

THE officers of the Section of Public Health at the forthcoming Annual Meeting of the British Medical Association at Glasgow are arranging an exhibition in the Kelvin Hall. This is a large hall adjacent to the University, where the sectional meetings will take place. In this hall the usual Annual Exhibition of drugs, foods, and appliances will be held, but a separate part is to be allocated for the purpose of the exhibition of the Public Health Section. A committee has been appointed in connexion with this exhibition, consisting of the medical officer of health of Glasgow, the city bacteriologist, and the medical members of Glasgow Town Council, with certain officers of the Section. The aim is to show specimens of public health interest from all the departments of Glasgow Corporation. For July 26th the following is the provisional programme of the Section: Dr. Richard J. Reece will open a discussion on "Port sanitation in relation to the public health of the country," Dr. F. E. Fremantle, M.P., a discussion on "Public health economics," and Dr. John Brownlee a discussion on "Statistics." On July 27th Dr. Roberts will open a discussion on "Defects in children on attaining school age," and Dr. McKail a discussion on "Industrial fatigue and vocational selection on a basis of physical inquiry"; the administrative requirements for the various types of tuberculosis will also be discussed. The following provisional arrangements have been made by the Section of Neurology and Psychological Medicine. July 26th will be devoted to psychotherapy. On July 27th Sir James Purves Stewart will open a discussion on "The treatment of neurosyphilis"; and on July 28th miscellaneous papers will be communicated. The officers of the Section of Medical Sociology have chosen as the subject for discussion "Alcohol as a beverage in its relation to certain social problems"; the problems selected are industrial efficiency, crime, mental disorders, and infantile mortality; the list of papers and openers of discussions is not yet complete. The officers of the Section of Pathology have arranged the following provisional programme. On July 26th there will be a discussion on "The origin of cancer in relation to specific forms of irritation," opened by Professor Fibiger of Copenhagen. On Thursday, July 27th, a discussion will take place on "Animal and vegetable pathology in relation to human disease," opened by Professors F. G. Hobday, F.R.C.V.S., and W. H. Lang, F.R.S. The officers of the Section of Otology have arranged the following preliminary programme: A discussion on "Septic sinus thrombosis, its diagnosis and treatment," with opening papers by Sir William Milligan and Mr. Hunter Tod; a paper by Professor Holger Mygind entitled "Otogenic collateral meningitis"; and a paper by Dr. J. S. Fraser and Dr. Stephen Young entitled "Is it worth while to remove aural polypi?"

THE EPIDEMICS IN EASTERN EUROPE.

THE resolutions adopted by the European Health Conference, which met in Warsaw at the close of last month, have just been issued by the League of Nations. This is a document of 16 pages, printed in French, English, and German, and it is dated Geneva, March 31st, 1922. Medical delegates attended from twenty-eight countries; the representative of Great Britain was Colonel S. P. James, M.D., of the Ministry of Health; the Italian delegates included Dr. Aldo Castellani, of the London School of Tropical Medicine. The object of the Conference was to draw up a detailed report on the epidemic situation in Eastern Europe, and submit plans for an international campaign. The Conference having heard a report by the Health Section of the League and by delegations of the different States, and having visited the quarantine stations, hospitals, and other organizations for the anti-epidemic campaign in the Russo-Polish frontier zone, recorded its unanimous opinion in a resolution of five paragraphs. The gist of these is as follows: (1) The conditions in Eastern Europe during and after the war favoured the development of dangerous epidemics, especially the insect-borne diseases typhus and relapsing fever; the food and water-borne diseases such as cholera, enteric fever, and dysentery; and other communicable diseases such as small pox. (2) The countries thus attacked did all that was possible in circumstances of great difficulty, and organized and carried out measures of control and defence; these produced a marked improvement in the first nine months of 1921. (3) Unfortunately, towards the end of the year a new and intense access of adverse conditions associated with famine, migration, and repatriation, severely overtaxed the anti-epidemic arrangements; the result was a sudden and violent recrudescence of typhus and relapsing fever, and an epidemic of cholera. The Conference is convinced that the increasing prevalence and extension of cholera in the Ukraine, together with the mass-migration towards the north-west from these and other famine-stricken areas, form an immediate danger to the rest of Europe, and the situation as a whole grows more menacing. (4) Unless much greater efforts are made without delay, the Conference believes that the present epidemiological situation will cause much more suffering and death in the infected areas, impede reconstruction, hamper trade, and threaten the whole continent of Europe. (5) The difficulties of dealing with the situation are accentuated by the lack of medical men and trained personnel, caused in part by disease and death among those who have devoted their lives to this campaign. On the motion of Dr. Castellani the Conference recommended that training courses for all grades of medical and sanitary staffs should be organized at two or three centres, with an expert international teaching staff. Further resolutions covered the following points: (1) International measures for regulating and notifying other infectious diseases besides those named in the Paris Convention; (2) mutual recognition of certificates for protective vaccination, disinfection, and delousing; (3) closer co-operation between all

States on matters of public health, based on systematic instruction and education of the people; (4) friendly mediation by the Health Section of the League of Nations when separate health conventions are drawn up between different States. Another resolution laid stress on the need for measures against famine, which is one of the chief causes of the present epidemics in Russia and the Ukraine. A concluding resolution outlined the steps to be taken to secure financial aid and co-operation by all European countries in the campaign against the epidemics in Eastern Europe, this organization to have representatives upon it of States not members of the League of Nations. The report and recommendations of the Warsaw Conference will be communicated to the Genoa Conference.

A PSYCHIATRIC MILESTONE.

THE one hundredth anniversary of the establishment of Bloomingdale Hospital as a separate department for mental diseases of the Society of the New York Hospital was celebrated on May 26th, 1921. An account of the centenary celebration has been published in a volume entitled *A Psychiatric Milestone*,[1] which is both interesting and instructive. The Bloomingdale Hospital was founded at a time when a wave of reform in the treatment of the insane was rising in Europe under the influence of Pinel in France and William and Samuel Tuke in England. Thomas Eddy, a philanthropic Quaker governor of the Society of the New York Hospital, becoming aware of this movement, was largely responsible for the creation of this institution, which has done so much for the insane in America. The history of the hospital was well worth recording, and as a number of well-known psychiatrists gave addresses at the centenary, we are presented with a valuable survey of the modern attitude towards the problems of mental disorder. Dr. W. L. Russell, medical superintendent, in describing the medical development of Bloomingdale Hospital, points out with a great deal of truth that, notwithstanding the great benefit which has been derived from physical measures in the study and treatment of mental disorders and the well-founded hopes of greater advances in this direction, the main task still continues to be what Pinel calls the management of the mind. Thus the treatment of the insane differs in some respects from that of any other form of illness; it must be humanistic and personal rather than strictly scientific. The creation of the right kind of atmosphere in an asylum is perhaps of even more importance than a research laboratory. Because this is so, as Dr. Russell says, the medical superintendent must, like Pinel, be willing to forget the empty honour of his titular distinction as a physician and do whatever may be necessary to make the institution a truly medical agency for the healing of the sick. This and other observations may be regarded as timely reminders that the executive duties of the medical superintendent should not be lightly handed over to lay control, as every administrative act must have a direct influence on the well-being and treatment—in a wide sense—of the patients in a hospital for the insane.

INTERNATIONAL EXCHANGE OF LECTURERS.

THE idea of instituting an exchange of lecturers in medicine between England and Continental countries, with which a beginning was made last year, is now being pursued further by the University of London. We have received from the academic registrar of the University information regarding lectures in medical subjects by professors from Holland and from the University of Paris to be given in London next month at the house of the Royal Society of Medicine, 1, Wimpole Street, W.1, at 5 p.m. On Wednesday, May 3rd, Dr. C. Winkler, professor of clinical psychiatry in the University of Utrecht, will give a lecture in English on "The human neo-cerebellum," in the course of which he will demonstrate a case of olivo-pontine cerebellar atrophy; the chair will be taken by Sir Frederick Mott. On Monday, May 22nd, Professor F. Widal will lecture on "Anti-anaphylaxie," with Lord Dawson of Penn in the chair; on Thursday May 25th, Professor H. Vaquez will lecture on "De l'érythrémie (Maladie de Vaquez-Osler)," with Sir Wilmot Herringham in the chair; and on Wednesday, May 31st, Professor J. Babinski will lecture on "Des reflexes de défense," with Sir J. Purves Stewart in the chair. These three lectures will be delivered in French. Particulars of two further lectures, by Dr. Murk Jansen of Leiden on June 12th, and by Professor Hijmans Van Den Bergh of Utrecht, on June 21st, will be announced later. All these addresses, arranged under the scheme for the international exchange of lecturers in medicine, are intended for advanced students of the University of London and others interested in the subjects. Admission is free without ticket. The University is naturally anxious to obtain good audiences for these distinguished visitors from France and Holland. Brief announcements will appear from time to time in the Diary of Lectures which appears each week on the last page of the SUPPLEMENT.

[1] *A Psychiatric Milestone. Bloomingdale Hospital Centenary, 1821–1921.* Privately printed by the Society of the New York Hospital. 1921. (Med. 8vo, pp. 220; 6 illustrations.)

"THE JOURNAL OF METABOLIC RESEARCH."

IN giving a cordial welcome to the first number of our new monthly contemporary *The Journal of Metabolic Research*,[1] we realize that the absence of a publication with such a title in America, where for years metabolic investigation has been ardently and successfully pursued, is curious. Readers have been accustomed to look to the *Journal of Biological Chemistry* and other publications for the results of American work, but that such a means of publication as this, which began its career in January, was required, appears clear from the overwhelming response to a circular letter dispatched on the question. Five answers only, some of them from the highest authorities, were adverse, on the ground that the existing journals were sufficient, and that the number should not be increased, or that other journals were to be launched which would cover this field. A larger number of correspondents endorsed the project, but excused themselves from participation for personal reasons. The response was, however, so unexpectedly hearty and strong that the plans for the appearance of the journal were carried into effect more rapidly than had originally been contemplated. The editor, Dr. Frederick M. Allen, whose name is so inseparably connected with the treatment of diabetes, is supported by fifty-four collaborators, including F. W. Peabody, L. G. Rowntree, H. S. Plummer, R. T. Woodyatt, E. V. McCollum, E. C. Kendall, J. T. Halsey, P. B. Hawk, Yandell Henderson, and Casimir Funk. The journal is published monthly by the Physiatric Institute—physiatrics meaning the cure of disease by nature, and not, as may as well at once be confessed we first fancied, a misprint for the more familiar word signifying the treatment of mental diseases. The get-up of the journal is admirable. All the seven articles in this instalment are on the pathology of diabetes, and all but two by the editor, who leads off with an interesting investigation into the hydropic degeneration of the islands of Langerhans after partial pancreatectomy. This change is proved to be a specific diabetic phenomenon produced solely by overstrain of the function of the cells by diets in excess of the weakened assimilative power. The causation of this hydropic degeneration, which may occur in prolonged hyperglycaemia, even without glycosuria, is discussed in subsequent papers. Further issues of this new journal, in which it may be anticipated that basal metabolism will receive due attention, will be awaited with interest.

SUSPENDED IMPURITY IN THE AIR.

SIR NAPIER SHAW, professor of meteorology in the Royal College of Science, communicated to a recent meeting of the Royal Society a paper by J. S. Owens, M.D., giving a preliminary account of an investigation undertaken in order

[1] *The Journal of Metabolic Research*, vol. 1, January, 1922. Edited by Frederick M. Allen. Published monthly by the Physiatric Institute, New Jersey. (Pp. 153; 22 plates. 10 dols. per year.)

to devise a simple and effective method of examining the quantity and nature of dust in the air, in industrial fumes, dust in mines, smoke fogs, and the like. Dr. Owens, whose name is well known for his inquiries into smoke abatement, has devised a new method of sampling for measurement and examination: a fine jet of air is made to strike a glass surface with high velocity, and the dust is deposited on the glass; various applications of the method have been found possible. As illustrating one application experiments were described which indicate that visibility is usually a function of the amount of suspended impurity; that suspended dust travels over great distances, records being described of dust which presumably must have come from the Continent; and that the microscopical examination of such dust records indicates certain curious differences depending upon wind direction, which at present cannot be explained.

BEIT MEMORIAL FELLOWSHIPS.

THE trustees of the Beit Memorial Fellowships for medical research have now approved certain changes in the regulations. Henceforth the election of Fellows will take place in July instead of December, and work will begin on October 1st instead of January 1st. Fellows will be classified in future into Junior, Fourth Year, and Senior Fellows. Not more than six Junior Fellowships, each of £350 a year, will be awarded annually, the usual tenure being three years. An extension of one year (Fourth Year Fellowship), at £400 per annum, may be granted on the recommendation of the Advisory Board. A limited number of Senior Fellowships at £600 per annum may be awarded, the usual tenure being three years; candidates for these must have been first elected Junior Fellows on or after January 1st, 1920. No change will be made in the emolument of any Fellowship held at the coming into force of these amended regulations on May 1st.

FELLOWSHIP OF MEDICINE.

THE following further lectures have been arranged by the Fellowship of Medicine in addition to those we announced in this column last week (p. 615) during May. On June 13th, Sir William Hale-White on "The clinical symptoms of *coli* infection of the urine"; on June 19th, Professor H. Maclean on "Recent work on albuminuria and glycosuria"; on July 12th, Professor A. Todd on "Surgery in rheumatoid arthritis"; and on July 19th, Mr. Victor Bonney on "Myomectomy, as opposed to hysterectomy." The lectures, which are open to members of the profession, will be delivered in the West Lecture Hall of the Royal Society of Medicine, 1, Wimpole Street, W., at 5 p.m. The syllabus of a two weeks' special course in general medicine, from May 1st to May 13th, can be obtained on application to the Secretary of the Fellowship of Medicine, as can also the syllabus of a course of six lecture-demonstrations on gastro-intestinal affections in children arranged at the Children's Clinic, Western General Dispensary, from May 15th to June 1st.

WE regret to announce the death at Ashburton, Devon, on April 19th, of Sir Alfred Pearce Gould, K.C.V.O., C.B.E., consulting surgeon to the Middlesex Hospital, at the age of 70.

THE Liverpool Medical Institution has established a lectureship to commemorate the work of the late Hugh Owen Thomas. The memorial lecture will be given in the theatre of the institution on Tuesday, April 25th, at 4.30 p.m., by Sir Robert Jones, K.B.E., C.B., who has been appointed first lecturer. Sir Robert Jones has chosen for the title of his lecture, "Hugh Owen Thomas—the man and his work." The lecture is open to all medical men and women.

THE British Chirurgical Club has recently paid a visit to Holland. The party spent two days at Amsterdam, where the clinics of Professors Noordenbos and Lanz were attended. Going thence to the Hague, the members were received by Dr. Schoemaker and spent two days in his clinic; Sunday, April 9th, was also passed at the Hague, and then followed two days at Utrecht with Professor Laméris. Much of great interest was seen at all three centres.

VENEREAL DISEASE.

A COMMITTEE OF INQUIRY.

IN a letter to the *Times* on November 22nd, 1921, Lord Dawson of Penn reiterated a suggestion he had previously made (January, 1921) that the differences of opinion in regard to the best way of handling the complex problem of venereal disease would be more easily elucidated if they were embodied in the two following propositions:

(1) What, in the present state of knowledge, are the most efficient medical measures for preventing these diseases?

(2) How far is it ethically justifiable to apply such measures?

Lord Dawson went on to suggest that those who had the technical knowledge should get together in conference and try to arrive at conclusions on the medical and administrative aspects of the problem uninfluenced by any ethical proposition. Until some conclusion, supported by a considerable preponderance of opinion, had been reached, it could not, he said, be reasonably expected that the Ministry of Health should do otherwise than maintain impartiality, giving a fair field and no favour to the two schools of thought and action. Then, with such conclusions before them, a wider public would have to decide whether it was ethically justifiable to found a policy upon sound opinion which could only be based upon knowledge; and the Ministry of Health might with advantage extend its encouragement to a round table conference of experts widely representative, who should consider the technical aspects of the problem.

The following correspondence has passed recently between the Minister of Health and Lord Dawson:

Ministry of Health, Whitehall, S.W.1,
January 3rd, 1922.

Dear Lord Dawson,

I have noted with interest your proposal that a committee of medical men possessing the requisite special knowledge should be constituted to inquire into certain aspects of the problem of venereal disease.

I understand that in your opiuion the best hope of solving this complex problem is first to endeavour to secure an authoritative pronouncement on its medical and medico-administrative aspects, the more so as men of eminence hold divergent views upon it.

The community as a whole would then consider this medical pronouncement side by side with the weighty moral and social issues involved and through its responsible representatives determine the right policy to be pursued.

As Minister of Health I am deeply concerned with this grave problem and write to say that I will afford encouragement and support to the holding of the investigation. That you should gather together a Selection Committee to nominate the members of the Committee of Inquiry would seem to be a sound and practicable method of securing the end in view.

Yours sincerely,
ALFRED MOND.

32, Wimpole Street, W.1,
March 31st, 1922.

Dear Sir Alfred Mond,

After receiving your letter of the 3rd January I proceeded to take action and with the following result.

The Committee of Selection was constituted as follows:

Sir Clifford Allbutt	Sir Archibald Garrod
Sir Anthony Bowlby	Professor Kenwood
Lord Dawson of Penn	Sir Norman Moore
Sir Walter Fletcher	Sir John Thomson Walker.

This Committee of Selection has secured the services of a Committee of Inquiry, which I am sure you will agree is alike strong in the abilities of its members and its

widely representative character. The membership of this Committee of Inquiry is as follows:

Mr. C. J. Bond, F.R.C.S.	Professor Kenwood
Surg. Commander Reginald Bond, R.N.	Sir William Leishman
Dr. John Brownlee	Dr. F. Menzies
Professor Bulloch	Sir Frederick Mott
Dr. D. S. Davies	Dr. Sequeira
Professor Dreyer	Dr. Spilsbury
Col. F. E. Fremantle, M.P.	Mr. Kenneth Walker, F.R.C.S.
Dr. Dorothy Hare	

In the opinion of the Selection Committee it is of importance that the Committee of Inquiry should be presided over by a distinguished lawyer, and they have been so fortunate as to secure the services of the Right Hon. Lord Trevethin as Chairman and Mr. T. J. Tomlin, K.C., as Vice-Chairman.

The Committee of Inquiry thus constituted has the support and confidence of both the National Council for Combating Venereal Diseases, and the Society for the Prevention of Venereal Disease.

The Committee of Selection have carefully considered the terms of reference to the Committee of Inquiry and are unanimously of opinion that the following are both succinct and comprehensive:

"To consider and report upon the best medical measures for preventing Venereal Disease in the civil community having regard to administrative practicability, including cost."

This reference has the approval of the distinguished Chairman of the Committee of Inquiry.

The Committee of Selection are confident you will share their view that it would be difficult to find a Committee of Inquiry more deserving of confidence and of the support and encouragement which as Minister of Health you have already promised to extend to its deliberations.

We are in complete agreement that after the Committee of Inquiry has reported the community as a whole will have to decide how far its recommendations can be properly made the basis of policy and action.

Yours sincerely,

Dawson of Penn.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

The Easter Recess.

On April 12th the House of Commons adjourned until April 26th, and the Lords adjourned until May 2nd.

Pensions Administration Debate.

Mr. Charles White, on April 11th, moved in the House of Commons for a select committee of inquiry into the procedure under which pensions were being reduced. He recalled that he had been a member of a Select Committee which sat in 1919 and 1920, and he appreciated that a Departmental Committee had since sat. He expected it would be said that further review at the present time was unnecessary. Nevertheless he asked for the appointment because the estimates were being reduced by about £20,000,000, and it was believed that concerted action was being taken by medical boards and inquiry officers to reduce the amounts of pensions. He asked, without any intention of being offensive, whether any hint had been given that economy must be extended in this direction.

Mr. White submitted that pensions were being reduced after the most casual and cursory examination by medical boards, and that dependants' allowances were being lessened or ended without adequate inquiry. In theory there were safeguards, but in practice they did not sufficiently protect. Allowances were being cut off in cases in which they had been granted on account of previous ill health being aggravated by war service. He submitted that there were thousands of such cases in which the men were left as human derelicts unable to obtain employment. He believed that this occurred largely because the Pensions Committees had ceased to function.

Mr. F. Roberts seconded the motion. He sought a specific answer from Mr. Macpherson whether appeals were turned down because records were not available of a man's disability on service. In regard to the full disability grant of 40s. a week he thought that it should be made absolutely firm, and not subject to possible reduction in 1923 as regards 20 per cent. on account of lowered cost of living. Other points which he suggested should be placed before the Committee were the pensions for widows and orphans and the qualification for entitlement. Captain Bowyer and Captain Loseby continued the discussion, the latter criticizing the Ministry for the way in which they had dealt with the questions of attributability and aggravation.

The Minister's Reply.

Mr. Macpherson, in replying, said it was evident there was suspicion that because the Estimates had been brought down by £3,000,000 below what was suggested by the Geddes Committee that there was something wrong. He had previously stated, and was glad to repeat, that whatever economies were made, they should not affect the legitimate rights of the ex-service men. He had to deal with three and a half million cases, an amount nearly equal to the population of Scotland. It would be strange if some members could not come to the House of Commons with some individual case for inquiry. The first fact which he wished to impress upon the House was that the expenditure on pensions must inevitably and necessarily be a declining quantity in the future. When he became Minister of Pensions they amounted to £123,000,000 a year; they had come down this year to £111,000,000; and next year they would be £90,000,000. A year and a half ago the Ministry was receiving as many as 500,000 new claims to pensions per week, and during the last six months they had, on the average, 1,000 claims per week.

Secondly, the diminution in the expenditure had been due to three important causes. There was the re-marriage of women and dependants; children grew beyond the pensionable age of 16 and went into employment; and there was the calamity of death. In the last year, from these three causes alone, there had been a diminution of £2,500,000 in the estimate.

The third broad reason for the diminutions had to be stated more generally. The Ministry had had during the last three years spent £45,000,000 on treatment and treatment allowances, whereas in 1919 they had spent only £1,000,000. Was not that a proof that so far from stinting the men the country was prepared to pay for their welfare? The right thing to do was to attempt by all possible means to restore these men to the social and industrial life of the community. Medical treatment had been given without stint. Every year at least 500,000 men got treatment, ranging from three or four weeks to eight or nine months, and in many cases over a year or more. On any one day no fewer than 125,000 men were receiving treatment and treatment allowances—and these were generous. In the past his Department had absorbed no fewer than one-fifth of the medical profession of the country in order to give the best possible medical treatment to these men. Having spent that enormous sum of £45,000,000 in three years, were they not expected to get any return from it? Were they not expected to find men better and pensions naturally decreasing? Considering the recuperative powers of the men, it would be severe condemnation of the Government and of the Ministry if after such an expenditure they could not show some beneficial results.

Lastly, Mr. Macpherson gave another group of reasons for the diminution. Foremost, there had been a reduction in the expenditure on administration. With the concurrence of the Departmental Committee they had reduced the membership of medical boards from three to two, and they were reducing the committees in the country from 1,200 to less than 200; they had reduced the staff employed by these people, and they had reduced the main headquarters of the Ministry by 14 per cent. There was not another Minister that could show the same record. All these items accounted for the reduction of expenditure. Mr. Roberts had suggested the time had come to get rid of irksome re-examinations by medical boards. That was exactly what they had done. Under the War Pensions Act he had established a final medical board, and he hoped that by the end of next year every pensioner in the country would be examined to see whether his disability was final or not. One of the first reforms he effected at the Ministry was to make the interval of time for calling up men one year instead of three months. In arranging that final boards should be established by the end of the year he had guarded the pension when there was any doubt as to finality. In every case he gave the man the benefit of the doubt. He had left the disability a conditional disability, so that if a man got worse in the future he would be able to go to an appeal board and get a proportionate amount. Coming to the actual reductions made, Mr. Macpherson again protested against the suggestion that the Government had influenced medical boards. The controlling power was in the hands of ex-service men. He believed he was right in saying that every doctor employed was an ex-service man, and 96.8 of the men who controlled the destinies of ex-service men were ex-service men themselves. The accusation made was absurd and base. He could support this assurance by figures. If there had been a general and artificial reduction of pensions it would be reflected in the figures of assessment, but they showed exactly the contrary. Men who were awarded what was termed a "conditional" pension were normally given that pension for a year, and were then medically re-examined. As far back as the figures available went—namely, two years—he found that pensions were now decreasing less than two years ago. In 1920, taking all the results of the medical re-examination of 50,000 men for six months, the average reduction in the rate of assessment on account of the improvement of the man's health was as much as six and a half points in the pensions' scale; in other words, something like 19.5 per cent. During the last six months the average rate had been 4.3 points, or something like 13 per cent. only in the scale. It was known very well that the majority of wounds was comparatively slight. The gist of the figures amounted to this—that as between now and a year ago the proportionate cases in each grade and for each degree of pension—ranging from the seriously disabled man who was getting 80, 90, or 100 per cent. disablement,

to the minor injury which was compensated for by a weekly allowance for one, two, or three years—remained exactly the same. That was to say, 7 per cent. now were and 7 per cent. a year ago were getting pensions of 70 per cent. or over. The men who had comparatively minor degrees of disorder or injury had steadily improved in health by the medical treatment provided as well as by their natural powers of recuperation, while on the other hand those who were very severely disabled had been left to draw their pensions. He quite understood that throughout certain parts of the country there was some misgiving as to the results of the examination, but what had he done? He had established medical appeal boards, with specialists on every one of them and not a single reduction was made without a personal examination by the appeal board. Members who brought forward cases against the Ministry never referred to cases which had been admitted. These medical appeal boards had in a majority of cases granted an increase, and not a decrease of the amount of pension. He had provided that there should be a jury appointed by the Lord Chancellor, of two doctors and one ex-service man to consider any appeal which came from the award of the Medical Appeal Board as to finality.

Dealing next with the question of change of entitlement, Mr. Macpherson said the charge was that the Ministry of Pensions not only changed entitlement but cancelled the pension altogether where at some given period in a pensioner's life a pension had been awarded. No one regretted more than he did that such review should be necessary. The facts were very simple. During the last year of the war and during the first year after the armistice, when thousands of men were being demobilized, the work of dealing with claims to pensions was a business of so large a volume that it was perfectly impossible for the staff of the Ministry to deal with the men at times. They had as many as 350,000 men in the military hospitals at that time. They had discharges of 60,000 men a day. These men were coming from every corner of the globe. They had no medical certificates. They were so anxious to get out of the army that they never went to the doctor to be re-examined. They rushed out with no evidence that they had any sign of disability. In the course of time they came back, and with the merest prima facie evidence they were granted pensions. He came across so many cases at that time that it was necessary to review entitlement in those cases. He regretted to find that all over the country men were drawing pensions to which they were not entitled. Having given a few extreme cases, Mr. Macpherson asked whether he was to be expected not to examine in such matters when he found that there were cases at that time still surviving. The regiments had come from all corners of the globe, their medical certificates were with the units in Mesopotamia, Egypt, and East Africa, and it was only now that he had been able to collect with a skilled staff all these medical cards. No fewer than 31,000,000 of these cards covering half an acre in cabinets existed at the present time. The House would realize the amount of work the Ministry had had to do during the last month. The process was now nearly completed. They had reviewed only 2 per cent. of those cases. In the result where the medical boards had reviewed these cases they had in the vast majority given the benefit of the doubt, and that he believed was done in accordance with the wish of the country.

Referring to the medical appeal tribunal, Mr. Macpherson said he was hoping that a conference would take place between officials of the Ministry and the Lord Chancellor's officials, because he believed there were cases that it would be wise to reopen where fresh and undoubted evidence had been obtained by the man in support of his claim. In resisting the motion for the appointment of a Select Committee, Mr. Macpherson said that the Departmental Committee which he appointed had sat for nearly eight months, and out of their 168 recommendations he believed that 116 were in active operation. Since then under the War Pensions Act last year he had appointed an Advisory Committee, and had met representatives from that House, of the country, and the various shades of opinion amongst the ex-service men, and he intended to consult them more.

Several other members followed, but the discussion was not completed when the House adjourned.

Grants to Voluntary Hospitals.—Mr. G. Barker asked, on April 12th, with reference to the terms and conditions of grants to voluntary hospitals, if the Treasury would modify the stipulation that grants made by the Commission were to be applied wholly to maintenance and in no case to capital expenditure. He made this inquiry in the interests of hospitals in the course of erection with the desire that the authorities in financial difficulties might be able to appeal to the Commission for aid to complete the work in hand. Sir A. Mond said that the Government decided against the proposal of Lord Cave's Committee for a grant in aid of capital expenditure on hospitals, on the ground that the hospitals were not paying their way on the existing buildings, and that it was unwise to build while costs were so high. He could hold out no hope of reconsideration of this decision in the present circumstances.

London Hospital Women Students.—Sir John Norton-Griffiths asked, on April 12th, if the attention of the Minister of Health had been drawn to the report that the London Hospital authorities proposed to restrict their medical teaching to men students; whether the hospital received any assistance by way of grants from the public funds; whether such grant was made with or without conditions as to its employment; and whether, seeing that the restrictions of medical teaching to male students was neither beneficial to the public health nor in agreement with the principle of grants from public funds to quasi-organizations were made the Ministry proposed to take any action in the matter. Sir J. Gilmour, in reply, said that the Minister's attention had been drawn to the subject. The only payments made to the London Hospital from the Ministry of Health's vote were in respect of the treatment of specific diseases. No part of the grant made by the Voluntary Hospitals Commission were applicable to the expenditure of the Medical School. He understood that in the opinion of the University Grants Committee, who made certain grants to the Medical School, the question of requiring a particular school to admit women students would arise only if facilities for University education in medicine of qualified women students were inadequate. This situation had not arisen in London University.

The Schick Test for Diphtheria.—Mr. Bromfield asked, on April 11th, whether the Minister of Health had contracted with the Wellcome Laboratories for a supply of material for the Schick test for liability to diphtheria and for a supply of toxin-antitoxin for immunizing purposes, and if so, the cost and conditions. Sir A. Mond said that no contract had been made. In the few cases in which his department had supplied the material these had been obtained from the firm in question at 12s. 6d. for fifty doses of Schick toxin and 40s. for twenty-five doses of toxin-antitoxin mixture, less the usual discount. No conditions attached to this supply.

Naval Disability Pensions.—Major Barnston, for the Minister of Pensions, stated on April 12th, in answer to Sir T. Bramsdon, that arrangements had been made under which the origin of the disability of naval invalids would be inquired into by a naval medical board. When a man claimed that his condition was due to service in the war his case would be considered by the Ministry of Pensions.

London Asylum Patients Discharge.—Sir Alfred Mond, on April 12th, gave an assurance that all applications for the discharge of patients from the London County Mental Hospitals were considered and dealt with at each hospital by the members of visiting subcommittees appointed by the Asylum and Mental Deficiency Committee for the management of that hospital, and by them alone.

University Education for ex-Service Men.—Mr. Fisher stated, on April 11th, in answer to Sir J. D. Rees, that the latest date prescribed for the lodging of applications under the ex-service student's scheme of university training was June 30th, 1920. Applications after that date had been exceptionally entertained where the lodging of an application was prevented by retention in the forces in a remote theatre of the war or by retention in hospitals. Otherwise fresh awards had ceased. The total number of students admitted to the benefit was 26,470. The last award was made on March 7th, 1922. The sum of six million was a provisional anticipation of the total cost when the scheme was first put forward. The excess of two million fell over the total period of operations.

Imported Milk.—Sir Alfred Mond, on inquiry by Mr. Hurd, on April 11th, said that so far as he was aware the conditions of production of foreign milk imported into this country were not worse than those which existed on many British farms. The amount of fresh milk imported was insignificant, and the processes to which sterilized, dried, and condensed milks were submitted were necessarily such as to minimize the risk of danger to health. All consignments of imported milk or milk products were liable to be inspected at the port of entry and those which were found to be unfit for human consumption were condemned.

ROYAL MEDICAL BENEVOLENT FUND.

THE annual meeting of the Royal Medical Benevolent Fund was held on April 4th, when Sir CHARTERS SYMONDS, Honorary Treasurer, was in the chair.

Dr. NEWTON PITT, Honorary Secretary, presented the annual report, which stated that the income in the grant department showed an increase of £500 over the previous year, and this enabled the committee to increase the amount of the grants in some of the more urgent cases. Many more really deserved an increase, but this was not possible. If each subscriber would make a point of asking one medical friend to become a contributor this would help the committee greatly. At present only 7 per cent. of the profession subscribed. The total received during the year in subscriptions and donations was £3,856, while the amount distributed to 241 cases was £3,372.

In the annuity department the income amounted to £4,122. There are 178 annuitants, fifty of which are of the value of £26 per annum, one hundred of £20 per annum, and the remainder varying amounts.

The *War Emergency Fund* had expended since its inception upwards of £20,000, and at the present time were educating over forty sons and daughters of medical men at public and other schools. The total amount received for this Fund was £35,620.

Cordial votes of thanks were accorded to the Officers, to the Editors of the *British Medical Journal* and the *Lancet*, and the Honorary Auditors.

Sir Thomas Barlow, Bt., K.C.V.O., was re-elected President, Sir Charters J. Symonds, K.B.E., Honorary Treasurer, and Dr. Newton Pitt, O.B.E., Honorary Secretary.

England and Wales.

VOLUNTARY HOSPITALS COMMISSION.

WE are informed by the Ministry of Health that the grants made by the Voluntary Hospitals Commission now amount to over £127,000. Among the more important of the recent grants are:

	£
Bristol Royal Infirmary (for reopening closed beds)	3,350
Sheffield Royal Infirmary	10,000
Sheffield Royal Hospital	7,650
Royal Albert Hospital, Devonport	1,000
Middlesex Hospital	5,000
West London Hospital	3,500
Prince of Wales Hospital, Tottenham	1,800

The majority of grants up to the present have been made to London hospitals, but this is mainly due to the fact that the figures for income and expenditure in 1921 were available earlier in the case of hospitals in London than in the provinces. Hospitals which had a deficit on the maintenance account for 1921 should, it is added, take steps to complete their accounts without delay, so that they may be in a position to apply through the local Hospital Committee for a grant.

MEDICAL REMUNERATION AT PLACES OF DETENTION.

The London County Council is reducing the remuneration of doctors employed part time at the two places of detention in London in association with reformatory and industrial schools. The present remuneration of the practitioners attached to these two places—Pentonville Road and Ponton Road—is £120 and £150 a year respectively. It is proposed now to vary the remuneration according to the number of children in the institutions, which number has a tendency to fall. The scale is to be £40 10s. a year when the total number of persons (children and staff) entitled to medical attendance is under thirty, 11s. a year for each person beyond thirty, and an additional payment of £54 in respect of every 1,000 children passing through the institutions in a year. As the children dealt with at Ponton Road are of a younger age than those at Pentonville Road, and consequently need more medical care, an extra sum of £13 10s. a year is to be granted to the medical officer at the former place. The total remuneration on the basis of last year's numbers will be approximately £132 for the officer at Pentonville Road and £102 for the officer at Ponton Road.

THE QUALITY OF GAS SUPPLIED IN LONDON.

Figures were submitted to the meeting of the London County Council on April 4th with regard to the quality of the gas supplied in London. The three gas companies which supply the greater part of London are the Gas Light and Coke Company, the South Metropolitan Gas Company, and the Commercial Gas Company, and the percentages of carbon monoxide in the gas supplied by these companies in January and February of this year were respectively 15.8, 7.6, and 12.5. The corresponding figures for 1921 were 19.7, 9.6, and 17.7. Only once during the past ten years—at the time of the coal strike of 1912—has the amount of carbon monoxide in the gas supplied by any one of these companies exceeded the 20 per cent. which was stated by Professor J. S. Haldane in his evidence recently before the Departmental Committee of the Board of Trade to be a reasonable maximum.

THE ROYAL LIVERPOOL CHILDREN'S HOSPITAL.

The annual meeting of this hospital took place on April 3rd, and the report showed a deficit of £9,000 during the year 1921. Unfortunately, the total amount of the subscriptions came to less than £1,000. The chairman, Mr. Alfred Holt, pointed out the inevitable result of such a calamitous state of the hospital's finances. If sufficient support was not forthcoming, the council would be compelled to close some of the wards. In every direction the council had been held in check by shortage of funds. The system of payment by patients had been approved and the funds collected had more than justified the council in changing the practice of the last half-century. The treasurer's statement emphasized the parlous condition of the hospital's finances, stating that there was a very considerable decrease not only in the amount of annual subscriptions but in the number of subscribers as well. A bazaar is to be held next December with the object of wiping out the present deficit, but the final solution of supporting the hospital and keeping it out of debt has still to be found.

Two new appointments to the honorary staff have been made which it was found were essential to the efficiency of the hospital: Dr. W. Johnson was appointed honorary assistant physician, and Mr. P. W. Leathart was appointed honorary surgeon to the ear, nose, and throat department.

Scotland.

THE MORISON LECTURES.

PROFESSOR ELLIOT SMITH'S Morison Lectures on the evolution of the human intellect will be given, as already announced, at the Royal College of Physicians of Edinburgh during the first week in May. The first lecture, on Monday, May 1st, will deal with man's pedigree and intellectual supremacy, and the nature of the factors that contributed to the attainment of his distinctive mental aptitudes. In the second lecture, on Wednesday, May 3rd, Professor Elliot Smith will discuss the part played by the acquisition of stereoscopic vision in stimulating the growth and elaboration of the cerebral cortex along the lines that eventually made possible the emergence of the human intellectual abilities. At the beginning of the third lecture on Friday, May 5th, the influence of the cultivation of the sense of hearing will be discussed, and the lecturer will conclude his course by considering the method of attainment of intellectual pre-eminence within the human family. The lectures, which will be given at 5 o'clock on each day, will be illustrated by lantern slides.

CHILD WELFARE INSTITUTE FOR SCOTLAND.

Reference was made in the JOURNAL of April 8th (p. 579) to an impending conference to consider the report of a provisional committee appointed in 1918 for the purpose of indicating how effect might best be given to the scheme for establishing a Child Welfare Institute for Scotland. The conference, held in Edinburgh on April 4th, under the presidency of Lord Provost Hutchison, was reminded that the trustees of the Carnegie United Kingdom Trust had offered £40,000 for the establishment of a Scottish Institute for Child Welfare, that the offer had been gratefully accepted in 1918, that a provisional committee had been for nearly four years considering the draft constitution and endeavouring to find a site for the institute, and that the trustees were feeling some disappointment that more rapid progress had not been made. Sir Leslie Mackenzie then presented a draft constitution and scheme of organization; he showed how the buildings known as James Gillespie's School could be adapted, indicated possible sources of income, and submitted an estimate of some of the annual expenses which would be necessary. In the long discussion which followed criticism was mainly directed towards the financial proposals, many speakers holding that the present was not a suitable time to establish such an institute, which would put an extra burden on the ratepayers; several were frankly incredulous as to the estimated cost of running the institute, and Professor Munro Kerr of Glasgow said he did not believe it was possible to conduct an institute of the kind on £1,500 a year and contribute anything to science. With the exception of Professor Munro Kerr the medical representatives present took no part in the discussion, which, as has been said, dealt entirely with finance; but among themselves there was a free expression of opinion that many, if not all, the objects sought for in the Institute might be obtained by co-operation with existing medical institutions and by strengthening the resources of existing child-welfare work; the proposal to set up a special library of child-welfare literature in such a city of libraries was regarded as superfluous. In the end the Lord Provost suggested that the meeting could approve generally of the constitution, that it could be sent down to all local authorities and associations and others interested for their observations, and that these bodies should be asked whether they would support an institute founded on this constitution. This suggestion was unanimously agreed to. On the day following the meeting the *Scotsman* newspaper published a leading article entitled "The Ratepayers' Burden" in which it was maintained that whilst an institute of child welfare was an estimable object in itself, the present was distinctly not the time for further costly social developments. It was also pointed out that circumstances had greatly changed since 1918, when the offer of the Carnegie Trustees had been accepted. Since the meeting a number of letters have appeared in the newspapers, most of them emphasizing the

financial difficulties of the scheme and of the time. A writer in the *Glasgow Herald* suggests that the Carnegie Trustees should earmark the grant, without prejudice, and allow a final decision to be deferred, say, till 1925.

ACTION AGAINST THE ROYAL FACULTY OF PHYSICIANS AND SURGEONS.

A judgement given by Lord Ashmore in an action by a dental student against the Royal Faculty of Physicians and Surgeons of Glasgow and the Incorporated Glasgow Dental Hospital contains some observations of general interest. A full report appears in the *Glasgow Herald* of April 5th. His lordship said that the question in this case, stated generally, was whether a certificate of attendance granted to the plaintiff by the dean of the Glasgow Dental Hospital was or was not binding on the defendants. The determination of this general question, however, had involved a somewhat intricate inquiry as to the genuineness or otherwise of initials of members of the staff of the Dental Hospital upon charts which purported to record the details of the plaintiff's work as a student at the hospital. He said that he ought to explain that counsel for the defendants also contended, and he thought rightly so, that the defendants in the discharge of their administrative duties towards the plaintiff, and in a question with him, were not bound to establish positively and definitely that the pencillings in question were not genuine; but that it was sufficient for them to show—as his lordship thought they had shown—that they acted as they did not capriciously, but reasonably and regularly and with all care and consideration that the circumstances called for and permitted. Lord Ashmore gave judgement for the defendants, the Royal Faculty of Physicians and Surgeons of Glasgow and the Incorporated Glasgow Dental Hospital, and found them entitled to costs.

Correspondence.

PERNICIOUS ANAEMIA.

SIR,—Dr. William Hunter, in the JOURNAL of March 18th, expresses his intention of giving a new name ("glossitic anaemia") to the disease long and generally known as pernicious anaemia. His reasons for the change are, briefly, two in number.

First, he claims that patients are frightened by the name "pernicious anaemia." No doubt many of them are, but not, in the majority of cases, for the reason he urges. The word 'pernicious," if we look it up in the dictionary, no doubt has the meaning "deadly." But as used in general speech it has not this connotation. If we say that a man is a pernicious liar we mean that he is a specially virulent sort of liar but not that his lying causes death and destruction; if we say that to be constantly changing the names of well-known diseases is a pernicious habit we mean that it is a habit to be severely reprobated but not one with necessarily fatal consequences. But if a patient has had some friend or acquaintance who has been said to be suffering from pernicious anaemia he has probably seen him get rapidly worse and speedily die without the treatment that has been applied doing much, if anything, to delay the fatal ending, and he is naturally frightened if he is told that he has the same fell disease. To call the condition "glossitic anaemia" would only have a very temporary effect. Patients for a time would be cheered by being told that they had not pernicious anaemia but only glossitic anaemia (just as many patients in past days have been reassured that they had not a cancer but only a sarcoma), but before long they would learn that the sufferers died just as surely from glossitic anaemia as from pernicious anaemia, and the name would soon acquire the same dread significance.

Secondly, he claims that glossitis is a constant and early sign of pernicious anaemia, and consequently is of outstanding value as a distinctive feature of the disease. To this I may say that for twenty years past I have especially asked every one of many scores of cases of pernicious anaemia that I have seen about soreness of the tongue. The majority have admitted it, but quite a considerable proportion have never had any sign of it, even up to a fairly late stage of the disease. I can confidently assert that "*sore tongue*," *though a frequent sign, is by no means a constant feature of pernicious anaemia, and, further, that even when it does occur it is not necessarily an early sign.*

A recent article in the JOURNAL gives evidence of the confusion which is liable to arise from attempts to change the names of well-known diseases. A suggestion was made some years ago to designate pernicious anaemia by the term "Addisonian anaemia." Mr. Thomas Sinclair of Belfast, writing in the JOURNAL of March 11th on the surgery of the blood, says: "In pernicious anaemia the part played by surgery has hitherto been inglorious if we consider the results of splenectomy in the management of the ordinary type; while in the Addisonian variety the extirpation of the adrenals has been equally unsuccessful." It is evident that he has been misled by this "pernicious" habit of changing names into confusing the so-called Addisonian anaemia ("the Addisonian variety of pernicious anaemia"), which has nothing to do with the adrenals, with Addison's disease, which, of course, has!

The one point in which I am in hearty agreement with Dr. Hunter is in his regret that both the public and practitioners in general have come to regard pernicious anaemia as almost necessarily speedily fatal, whereas it is a disease which is, for a time at any rate, eminently amenable to treatment, in which life may often be much prolonged and which may occasionally be cured.—I am, etc.,

Manchester, April 9th. CHARLES H. MELLAND.

SUNLIGHT AND RICKETS.

SIR,—At the conclusion of your leading article in last week's JOURNAL (p. 611) on sunlight and rickets it is suggested that studies similar to my own in India should be repeated in this country, paying due attention both to diet and to hygiene. Such inquiries have already been carried out in Glasgow by Dr. Leonard Findlay in 1915, and again in 1918 by Miss Ferguson, working under the direction of Dr. Findlay and Professor Noël Paton. In 1919, through my association with these investigators, I became familiar with their work, and this knowledge enabled me to appreciate the fact that, if Findlay's views were correct, rickets should be common among the better classes in Nasik, where seclusion of women and children is practised. My investigations followed closely those of the Glasgow inquiry.

In Nasik conditions for such an inquiry could hardly have been better arranged in a laboratory experiment. Here the better classes had the confinement factor present with the better diet, while the poorer classes ate the poorer diet and were not confined. It would be impossible in this country to find the causal factors so suitably arranged. Bad hygiene and poor diet are both found in the poorer classes, and neither in the well-to-do; hence the well-to-do must be left out of account altogether, and in Miss Ferguson's study of the one social class it was found that the great predisposing factor was bad hygiene and poor parental care.

To my mind, the striking point was the occurrence of rickets in the better classes in India, and probably this is the only country in the world (excepting some Mohammedan states) where such a condition of affairs exists and also where seclusion of women and children is a definite custom. It should be mentioned, however, that this system of purdah—that is, seclusion of women and children—is not a religious matter so far as Hindus are concerned. All the Hindus that I have met repudiate the suggestion that their women kept purdah, but they readily admit that they are secluded by custom.

I think the strongest evidence in favour of Findlay's view is to be found in my cases of late rickets. Sixteen out of seventeen cases were in the better classes, all were females, and the age of onset in the big majority was between 12 and 13 years. Well-to-do girls go to school and run about till the age of 12, when they go into seclusion. Within a few months of this late rickets develops. There is no change in the diet. Their brothers, who eat the same diet but who do not go into purdah, do not get the disease. Neither do poorer Hindu women, who eat a much poorer diet and who keep no purdah whatever.

Lastly, I may mention that the houses occupied by the better classes in Nasik are not stuffy in the sense that we understand the term in this country. There was an absence of moving air and the rooms were small, hot, and very dark. —I am, etc.,

Glasgow, April 17th. H. S. HUTCHISON.

SIR,—I read with interest your article on rickets in the JOURNAL of April 15th (p. 611). I was reminded by it of a conversation I had a few years ago in the lion house at

the Dublin Zoo. A good many lions are bred there, and a very intelligent keeper discussed their health and upbringing. He said the chief trouble they had with them was rickets, but since they had increased the amount of fat in their diet no cases of rickets had occurred. This would tend to show that the food factor is of greater importance, as the lion house is light and airy.—I am, etc.,

Acton, W., April 16th. W. A. RUDD, M.D.

THE HOSPITAL POLICY OF THE LABOUR PARTY.

SIR,—It seems to me that the most important recommendation of the Labour party in its statement of policy with regard to hospitals is one which you do not name specifically at the beginning of your leading article of April 8th (p. 571), although it is dealt with in the course of your argument. Recommendation 11 says: "It [the Labour movement] would make all public hospitals free and open to everyone who would be likely to derive benefit from institutional treatment." This proposition (assuming that the Labour party uses the term "public hospital" to distinguish it from the private hospital or nursing home) could only be carried out by the State, and so leads naturally to Recommendation 1 and indicates the authority which, in the opinion of the Labour party, should organize a complete hospital system.

Free hospital treatment open to everybody is by no means an impossible proposition. The State, through municipalities and other public bodies, has already taken over the provision of many necessities, such as roads, sewers, water supply, postal services, the treatment of some diseases, the prevention of others, education. There is no reason to suppose that the State provision of free hospital treatment would be any more difficult than the State provision of free education. It could hardly be more costly.

In discussing the proposition of free hospital treatment for all it would be useful to have a résumé of the arguments in favour of the retention of the voluntary system, and of the evidence in support of those arguments; and for this reason I regret that your very able leader was limited mainly to criticism of the misstatements and perversions of the Labour party's manifesto. Doubtless the arguments for the voluntary system have already been set forth by Lord Cave's Committee. But the best answer to Labour's statement is to reiterate the arguments on the other side.

I suggest that the advantages of the voluntary system are to be found under the following headings: cost, competition, humane treatment of patients, freedom of staffs from bureaucratic control, encouragement of the charitable. The matters in which the voluntary system is likely to fail unless very strenuous efforts can be made are: accommodation, distribution, co-ordination, transport. The directions in which no solution will be found, whatever the aspirations of the Labour party may be, are: the avoidance of class distinction and the abolition of hours of waiting. And it is highly unlikely that representation of public bodies or of small contributors on boards of management will lead to any benefit.

There is, perhaps, some interest in the question whether there is any difference, and if so what, in the provision by public authorities of such things as sewers, and of such advantages as education and hospitals. Is it not possible that sewers do not directly affect the individual, who is therefore indifferent to the provider, whereas with the more intimate concerns of education and health there is a tendency to feel that better value is obtained by paying for them directly rather than unwittingly by means of rates?—I am, etc.,

London, W., April 12th. CHAS. BUTTAR.

SIR,—The leading article in the JOURNAL of April 8th (p. 571) is unjust to the leaders of progressive political thought and to those medical men and women who have spent laborious years in seeking some better way by which the people may have their ills attended.

The profession of medicine has always been held in unusual honour by all sections of progressive political thought. It has been, indeed, looked to as one of the safeguards of the personal liberty of the citizen. The doctor could be relied upon, it was thought, by virtue of his humanist calling to give a sympathetic ear to the poor and ailing as against a robust and well-to-do oppressor. Recent difficulties have not arisen on this side, but have their origin in the conduct of the insurance system by which the Government, societies, and medical practitioners appear to come into positions of disharmony.

The tragedy of the insurance service has given birth to fresh evils. The new form of service tends to set up standards of practice in which the essentials of our art in the care of the individual are subordinated to the need of keeping pace with exacting non-medical details required by a bureaucratic control. In the impossible task of working for patient, society, and committee, complaints multiply and all four parties are at loggerheads. The public, reading of these quarrels in the press, is critical of medical affairs. Tales of the wealth of doctors, their motor cars, frequent and expensive holidays, and other forms of luxuriant living mask the fact that the great majority of medical men and women have small incomes and live as modest and strenuous a life as any section of the community. The alienation of some part of public sympathy is accompanied by the increase of eclectic practitioners, mental cults, and spiritual healing, unwelcome facts to those who believe the soundest and highest forms of healing of body and mind are and should be obtainable within the fraternity of medicine.

The ancient traditions of our profession have always had an humanitarian basis, and included the highest consideration for the individual patient. This regard for the personal freedom and welfare of the patient has been equally the chief aim with the leaders of progressive political thought. They have sought in every way to gain the whole-hearted co-operation of the profession on behalf of the health of the community. How, then, has the separation, so strongly marked in the leading article, arisen? It is partly, at least, a misconception which could be removed by amicable parley. We may remind ourselves of the results of such time-old disputes by the words of Coriolanus on meeting the tribunes of the people:

> "when two authorities are up,
> Neither supreme, how soon confusion
> May enter 'twixt the gap of both, and take
> The one by the other."

The fresh disaster which has so suddenly arisen, in so far as it results from practical administrative and financial difficulties with which the Government and the societies have to contend, is their business to solve. The profession, however, is being penalized apparently through these bodies seeking to transfer blame to the profession for their own deficiencies. They cherish the fond illusion that if they can control the doctor most of these difficulties will disappear. The doctor will be taught to manage their members, and that will save them much trouble. The system now being evolved seems to be a means to that end. It is not only foreign to the customs of the healing art, but bears little resemblance to the aims and principles expressed in the best progressive political literature. On the contrary, it is directly opposed to them. Instead of making for social freedom and the evolution of a fraternal body politic, the present trend restricts the individual, creates animosity, and makes for inefficiency.

There is no support in the best progressive opinion for the control of any section of the community by another. The trend of thought is strongly against such a development and in favour of independence of the arts and crafts. Least of all would it support any governmental, financial, or industrial sections in an attempt to control and refashion an art and craft so specialized as that of medicine.

The present issue is confused partly by the use of terms which are now beginning to pass into disuse. Such are "State service" and "nationalization," referred to in the article. These earlier names have become abused and distasteful and should be replaced by others relevant to present aims.

It is clear the profession in England will during the next generation find itself on a new road. In which direction should we tend? In a letter already far too long it is impossible to pursue such a question. What we need to remember is that the best progressive political thought, far from being inimical to medical interests, is the warmest advocate of the profession. It would not hinder or enslave but aid the evolution of medicine as a free art and cratt and assist its true function of thinking out and applying the best means for the relief of ailing humanity and the advancement of the health of the community.—I am, etc.,

Forest Gate, E., April 11th. V. J. BATTESON.

THE NATURE AND SIGNIFICANCE OF HEART SYMPTOMS.

SIR,—Sir James Mackenzie's article of April 1st (p. 505) raises one very interesting question, for which I think no satisfactory solution has yet been offered. We are told that one of the characteristics of heart muscle is the latent period. This latent period may roughly be divided into two parts. No stimulus, however strong, if applied during the first half will produce a response. In the second half a stimulus will produce a response of subnormal strength, to be followed by an interval equal to the remaining moiety of the interrupted latent period and the succeeding one, before the occurrence of another normal beat. In practice these experimental deductions are confirmed in the normal heart, subject to occasional extra-systoles of auricular origin.

There are, however, two conditions—auricular fibrillation and idio-ventricular rhythm—in which the heart muscle seems to lose this characteristic.

Sir James Mackenzie has suggested, in explanation of some other peculiarities which these conditions have in common, that there is a difference in the quality rather than in the quantity of the stimulus governing the ventricular contractions. Adami suggested some years ago that the impulse arising from the sino-auricular node governed dilatation no less than contraction, and that the first part of the latent period, during which no stimulus is effective, might be regarded as a period of active dilatation, or stretching of the cardiac muscle, such as occurs in other muscles under the influence of reciprocal enervation.

Grouping these two suggestions some conclusions may, I think, be tentatively drawn, subject to further experimental findings:

(1) That the cardiac cycle consists not merely of an active and a passive phase, but of two phases of oppositely directed activity.

(2) That the co-ordination and timing of these two phases is under the control of the conducting system of the heart.

(3) That with the disappearance of this control sporadic impulses of a contractile or dilatory nature arise at different points in the heart musculature, and thus lead both to defective filling of the ventricles on the one hand and inadequate contraction on the other.

Finally, it may be suggested that the latent period, or dilatory phase, is characteristic of the conducting system; and that the difference in quality, suggested by Sir James Mackenzie, may well be the entire disappearance of active dilatation, to be replaced by passive dilatation and irregular and inco-ordinated contraction.—I am, etc.,

Dublin, April 5th. T. W. T. DILLON.

THE RECOGNITION OF AORTIC INCOMPETENCE.

SIR,—It has long been my intention to write to the JOURNAL concerning a systolic murmur at the second right space, and my attention was recalled to the subject by Dr. Brockbank's remark that he could not "hear ear to ear" with Dr. Broomhead. This murmur is undoubtedly very common, and I could let Dr. Brockbank hear it at any time. Before the war I had made the murmur the subject of a very complete investigation and had satisfied myself that I had discovered the cause of it. I did not at that time publish the paper and it has lain ever since waiting the light of day. I may say that it was at the instigation of the late Professor Greenfield of Edinburgh University and of Dr. Alex. James of Edinburgh that I went into the subject of this—as far as I could ascertain—unrecorded murmur, and that I hope to send a communication to the JOURNAL in due course.—I am, etc.,

Perth, April 7th. THOMAS LINDSAY, M.B., F.R.C.S.E.

VIENNA KLINIKS.

SIR,—In the Klinik Hajek I saw a course being held in English for eight people, presumably Americans and English. These courses are of an advanced kind, specially adapted to the graduate student. All the cases are carefully selected and studied beforehand, so that no time is lost. This is in contrast to the English method, whereby half the time is wasted in the routine work connected with the clinic.

At the Klinik Hajek constant use is made of the binocular glass of Wesserly, whereby both eyes are used for all operations. I may add that Professor Hegener of Hamburg always uses his binocular apparatus, even for the out-patient examinations. No instrument maker in London seems to know anything about such instruments.

This Klinik is a large building with many small wards. Particularly striking is the large number of cases of total extirpation of the larynx. The Klinik also possesses a large phonetic laboratory with a speech clinic, which runs morning and afternoon five days in the week. It has an excellent apparatus equipment, including a fine drum for making speech records and a laryngostroboscope. It is in charge of Dr. Hugo Stern. He states that he has treated 613 cases of laryngectomy, and has taught all but two to speak well. His method is to teach them to swallow (!) air and then speak with a new vibrating adjustment formed in the lower pharynx. The success is almost incredible. Many persons return to employments where they have to speak much and to telephone. At my visit two such cases happened to come in; they were actually able to speak clearly. The result depends on the skill of the physician in teaching the patient to swallow air; this is not the gift of everybody.

The interest of Vienna in speech work is remarkable. At another hospital there is a large speech clinic in charge of a physician. In the building of the Physiological Laboratory there is the Phonogram Archive founded by the famous Professor Sigmund Exner. A Society of Experimental Phonetics—whose members are largely medical men—holds regular meetings.

This account would not be complete without reference to the conditions of living in Vienna. Two pictures may be contrasted. Living at the finest hotel and in the most expensive style I did not succeed in spending more than 6 shillings a day, as the rate of exchange was £1 = 45,000 crowns. The other picture was a sad one. An American has arranged so that the professors of the University can obtain a lunch at a certain restaurant for 40 crowns (= 1 farthing). A hundred of the most famous men of science and learning are present every day. A tram fare costs 60 crowns and they cannot afford to go home and back for lunch.—I am, etc.,

E. W. SCRIPTURE,
Medical Officer of the Speech Clinic,
London, E., March 29th. West End Hospital, London.

REDUCTION OF MEDICAL FEES.

SIR,—I would like to assure Dr. Wilson Shaw that I had no desire to make an "April fool" of him, and that I really intended him to take me seriously. I fully sympathize with his grievances, but I am afraid most of the facts he brings to your notice are entirely beside the mark as far as the suggestion contained in my letter is concerned.

If the profession consider that their pre-war fees were not a just recompense for their services, I see no reason why the whole question of fees should not be reconsidered on its merits; but to obtain that increase under the cloak of the increased cost of living solely, as was recommended by the Council of the British Medical Association, would, in my opinion, be a lack of honour on the part of the profession. It is in honour bound to fall into line with those who, like the civil servants, have been compulsorily required to submit to a reduction of their bonuses and salaries as the cost of living has come down. How much greater prestige will the profession obtain if it does this on its own initiative than if compelled to do so through the force of public opinion!

It is chiefly those who are in touch with medico-politics who appreciate the loss of prestige the profession has undergone of late years. I fully realize that it will be a big act of self-denial on the part of each one of us, and I speak for myself if my suggestion is carried out by the Council, and consequently all the more honour to us, but I am fully convinced that we are in duty bound, as the cost of living has decreased, to make some reduction on that 50 per cent. increase, and that by doing so we shall show the public that our fight against the State for just and fair remuneration is entirely a matter of principle and not a grabbing for mere filthy lucre.—I am, etc.,

Woldingham, April 9th, 1922. W. McD. ELLIS.

THE CONFERENCE OF STAFFS OF HOSPITALS.

SIR,—Mr. Harman is right[1]; he made no mention of non-payment of lay boards while insisting on their voluntary uncontrolled service, and thereby demonstrated his failure to grasp essential factors. Plainly, if hereafter boards are paid, the party who pays, be it State, county council, or trade union, will eventually rule the board, and farewell then to voluntary

[1] BRITISH MEDICAL JOURNAL, April 8th, 1922, p. 582.

control. Moreover, those "volunteers" whom he mentions, once they had accepted the King's money, were liable to court martial if they disobeyed orders, and their "voluntary" enlistment was no protection to them. Mr. Harman evades my actual question, which had reference only to logic and sentiment. In December, 1920, having in the morning repudiated logic on the plea of sentiment, in the afternoon he supported the Leicester motion, which originally began: "That the logical position for the members . . . to take up . . . is." It was a crudely unsentimental plan based exclusively on logic. It is true that Dr. Clarke, perceiving that Mr. Harman had torpedoed his pet proposal, held hurried consultation with him, and elided the passage quoted, but this belated tactical manœuvre in no way altered the facts, and indeed, while erasing the word "logic" from his motion, Dr. Clarke forgot to eliminate it from his speech. I described at the time my impression of that conference thus: "All the morning we did lip-service to the 'voluntary system' to preserve our dignity, and murdered it in the afternoon to line our pockets." Mr. Harman has turned a second somersault concerning the Gordon Dill scheme, which he applauded in November, 1921,[1] and now condemns. Three is said to be a lucky number; is it too much to hope that he may exhibit presently a third performance, and rescue the voluntary system from inevitable ruin by execrating the Leicester motion?—I am, etc.,

Chichester, April 8th. G. C. GARRATT.

SIR,—I thank Dr. Garratt and yourself for the courtesy of a sight of Dr. Garratt's letter of April 8th. This letter, and that of his dated March 30th (printed in your issue of April 15th), contain so many excursions that, were I to attempt to deal with them seriatim, I fear my labour would be in vain; for even if you were so liberal of space as to print so much, I doubt if anyone would spare the time to read it. Besides, the answers to them all—are they not written in the pages of that admirable report of the proceedings of the recent Conference which was printed in the SUPPLEMENT of April 1st?

The proper retort to Dr. Garratt's general criticism, to my thinking, is not to be found in adventures into scrappy polemics or guessings as to what may be or what may hap, but it is to be found by concentrating attention on the essential points of the Association policy. These points are summed up in paragraph 3 of the introductory section of the report (printed in the SUPPLEMENT of February 25th, 1922, p. 45):

> "3. The Association recognizes a dual policy as regards the voluntary hospitals: (*a*) that the purely charitable side should be continued wherein the whole cost of the maintenance of indigent patients is met by the gratuitous contributions received by the hospital and on whose behalf the services of the honorary medical staffs are given gratuitously; (*b*) that other patients who are not indigent may be received for treatment at voluntary hospitals when adequate treatment cannot be obtained elsewhere, and that for them payment should be received by the hospital either from the patients themselves or on their behalf from the authority or body referring them to the hospital, and that on account of their treatment some method of remuneration of the honorary medical staff should be arranged."

The real question is: Are these points fair and just as between all parties concerned? I for one think that they are both fair and just, and so fair and just that we members of hospital staffs may, as reasonable men, press the acceptance of them upon those other reasonable men who manage our hospitals.—I am, etc.,

London, W.1, April 12th. N. BISHOP HARMAN.

ANTISEPTIC COAL-TAR DYES.

SIR,—With reference to the leader in last week's issue of the JOURNAL on the antiseptic action of the coal-tar dyes, it is an interesting fact that this action has been known to the mill workers in Yorkshire for many years.

More than twenty years ago the owner of a mill in Yorkshire for manufacturing and dyeing serges showed me round his works. I noticed a mill operative who had cut his finger dip it, while still bleeding, into a vat of, as far as I can remember, indigo-blue. I asked the reason for this and was informed by the owner of the mill that it was the custom of all the operatives, when they cut themselves, to bathe the injured part in the dye, as they were convinced that this prevented sepsis and hastened healing. I regret now that I did not pursue the matter further.—I am, etc.,

Glasgow, April 16th. DAVID MACDONALD.

[1] BRITISH MEDICAL JOURNAL, SUPPLEMENT, November 26th, 1921, p. 198.

RESUSCITATION AFTER APPARENT DEATH.

SIR,—Correspondence on resuscitation after apparent death induces me to place on record the following remarkable case in which blood-letting after apparent death saved a life. It emphasizes the importance and urgency of venesection under exceptional circumstances. And the rapidity of the procedure was an essential factor if success were to be obtained.

A. B., a diver, aged 27, was removed out of a depth of water alongside a pier. He was wearing a diving dress, and was believed to be dead. I was quickly to hand and found him in breathless asphyxia with dilated pupils and insensitive conjunctivae. No pulse could be felt nor heart sounds heard on applying my head to the bare cold chest. I adopted the practice of artificial respiration (Howard method) for at least three minutes, having previously opened a vein over the right elbow with a pocket knife from one of the assembled crowd. Friction of the extremities and warmth were being attended to. Blood oozed from the vein soon after its incision, when suddenly it spurted and there was a voluntary respiratory gasp. Artificial respiration was soon followed by natural breathing. Fifteen ounces or thereabouts of venous blood had escaped from the vein when I tied the incision with my handkerchief over a small pad.

I found the interior of the diving dress quite dry and so no water had entered his chest.

The patient remained, after his removal home, blind and semi-unconscious for forty-eight hours. Petechiae were noticed on the body; melaena followed with blood in the urine. The ophthalmoscope detected retinal haemorrhages. He was also deaf. His vision returned gradually on the fourteenth day. He had no memory of what had happened to him.

At no period did he have subcutaneous injections or saline infusion. The only course of medication was calomel and Epsom salts.

He was restored to health after six weeks of invalidism.

The history of this man is interesting, for had I not released the engorgement of his venous system, had I cut down on the cardiac region and squeezed the heart, surely I should have spoilt what spark of life was still resident in that congested organ. The subsequent record of the case proves that there was much capillary escape of blood into the body tissues, including the head and abdomen.—I am, etc.,

Bournemouth, March 20th. JOHN F. BRISCOE.

Obituary.

ARTHUR WILLIAM BACOT, F.E.S.,

Entomologist to the Lister Institute of Preventive Medicine.

BY the death of Mr. A. W. Bacot on April 12th, from typhus fever contracted in the course of experimental research into this disease in Cairo, medical entomology has suffered a grievous loss, and his death adds one more to the already long toll of victims which this disease has claimed in the attempt to solve its still mysterious etiology. The circumstances are doubly tragic in that as we write (April 18th) his colleague Dr. J. A. Arkwright, who fell sick of the same disease about April 6th, lies in a critical condition.

Bacot and Arkwright went to Cairo in January of this year, at the request of the Egyptian Government, to carry out researches into typhus fever, a disease which has long been endemic in that city. The opportunity of continuing their researches in a city where fresh material would generally be available was welcomed by both experts, and all the more so as their previous experience both with trench fever, typhus fever (in Warsaw and at home), and the *Rickettsia* problem generally had indicated what might prove to be likely lines of investigation. Laboratory accommodation was provided for them at the Hygienic Institute, of which Dr. Charles Todd is director, and there, as we know from letters dated so recently as April 3rd, both workers were mainly occupied with experiments on lice infected with typhus virus obtained from cases at the Infectious Hospital. Mr. Bacot fell ill about March 25th, and for some days the diagnosis was uncertain, the onset suggesting enterica. He was removed to the Fever Hospital at Abbasieh on March 30th, and from that date the diagnosis was not in doubt. He reached a crisis about April 8th, but lung trouble with some secondary fever intervened and death took place on April 12th. Dr. Arkwright was removed to hospital on April 7th, and his wife, who had accompanied him to Cairo, was installed to help in the nursing.

Arthur William Bacot was appointed entomologist to the Lister Institute in 1911 with a long record behind him of experience and research in insect bionomics, and from that date his energies were devoted to the medical aspect of his subject. Probably few persons in the world were so well qualified as he in insect lore and experimental technique, to

carry out research on insect vectors in connexion with human disease. Contributions from his pen, published in these pages and elsewhere since 1911, number nearly forty; here one can pick out only the more salient features of his work. From 1911 to 1914 Bacot was chiefly occupied with research into the bionomics of fleas and their rôle in the transmission of plague from rat to man. With C. J. Martin he conducted a most fascinating experimental investigation into the minute mechanism by which the infected rat-flea succeeds in passing on the virus of plague. He showed also, among other researches on fleas, that certain bacteria taken into the alimentary canal during the larval phase might survive the metamorphosis. In July, 1914, Bacot proceeded to Sierra Leone to take part in an investigation into yellow fever, his services being placed at the disposal of the Colonial Office. His work for this Commission on the bionomics of *Stegomyia fasciata* (*Aedes calopus*) appeared in 1916.

On his return to this country in October, 1915, Bacot turned his attention to the bionomics of lice, with the special object of devising simple means of sterilizing clothing and preventing louse-borne infection, and he accepted the position of honorary adviser to the War Office on entomological questions. During the war Bacot's advice in all matters pertaining to insecticides was eagerly sought and valued. In December, 1917, Bacot and Arkwright joined the Trench Fever Committee formed by the Director-General A.M.S. for the study of trench fever, and the committee was not long in being before definite experimental evidence was obtained of the carriage of the trench fever virus by the louse. Bacot had control of the entomological side of the inquiry, was responsible for the supply of infected lice, and superintended their feeding on trench fever patients and the collection of the louse excreta for further experiment. In the course of this work Arkwright, Bacot, and Duncan described the peculiar *Rickettsia* bodies found by them in the gut lumen and excreta of infected lice. These bodies did not appear in the louse until a period of eight or twelve days had elapsed after a feed on a trench fever patient, and it was only then that such lice were found capable of again infecting men.

Parallel experiments were undertaken with typhus fever virus obtained from Ireland in 1918, and since that time Bacot's work has been concerned almost exclusively with experimental research bearing on the rôle of *Rickettsia* bodies not only in lice experimentally infected with the virus of typhus fever but also in insects other than lice, such as the bed-bug, which appears to harbour very similar parasites. In 1920 Bacot's services were lent to a Commission appointed by the League of Red Cross Societies which proceeded to Poland to investigate typhus fever. The work of this Commission, recently published in book form by Drs. Wolbach and Todd, strongly supports the claim of *Rickettsia* bodies to represent the actual virus of typhus fever; the subject, however, is still *sub judice*. While in Warsaw (1920) Bacot fell a victim to trench fever, and he communicated to the BRITISH MEDICAL JOURNAL (1921) an admirable account of that illness with fully documented experimental details. This is of some interest in the light of his tragic death from typhus.

The loss to science by his death at the comparatively early age of 56 deprives the Lister Institute of a most able and fruitful investigator and a personality that charmed all who had the pleasure of his friendship.

J. C. G. L.

Dr. MAJOR GREENWOOD sends the following tribute to Bacot's memory:

Bacot knew the risks he ran. In his letters to me from Poland he dwelt upon the danger of infection from the excreta of lice; he was aware that even his masterly technique was not accident proof; he knew what was the prognosis of typhus in a man of 56. He also knew that no younger man had his special powers or could take his place in the collaboration with his friend Arkwright. So he gave himself for humanity, without, I believe, even dreaming that it *was* a sacrifice, for the note of the man's character was a selflessness which is rarer than unselfishness. He combined a masculine scepticism in thought with a feminine tenderness in action which I suppose Plato loved in Socrates:

"'But I may and must pray to the gods that my departure hence be a fortunate one; so I offer this prayer, and may it be granted.' With these words he raised the cup to his lips and very cheerfully and quietly drained it. Up to that time most of us had been able to restrain our tears fairly well, but when we watched him drinking and saw that he had drunk the poison, we could do so no longer, but in spite of myself my tears rolled down in floods, so that I wrapped my face in my cloak and wept for myself; for it was not for him that I wept, but for my own misfortune in being deprived of such a friend."

There is more than one Phaedo amongst Arthur Bacot's friends.

THE LATE PROFESSOR F. D. BOYD.

DR. NORMAN WALKER writes: Boyd and I were at the Edinburgh Academy together, but four years' difference in age makes a big gap between schoolboys, and I only knew him then as a small boy with very red hair, a very bad stammer, and a rather hasty temper. Nature gradually altered the first, and the others were conquered by his own determination. Those who listened to his lucid and interesting clinical lectures in recent years will hardly believe that in his student days conversation with a stranger was positively painful. It was probably this failing which was responsible for the fact that he failed to obtain honours with his M.B., and he used whimsically to recall his experience of meeting in an oral an examiner who had an equally bad stammer and who thought he was impertinently mimicking him. He was house-physician with Dr. Brakenridge, one of the last of the old school of Edinburgh physicians, who combined a select family practice with hospital and consulting work. When I returned to Edinburgh in 1891 I found myself within a few yards of the house where Boyd had just put up his plate, and we took up the threads of a friendship which was unbroken and unclouded for over thirty years.

I do not think he had any medical ancestry, but he had an interesting family connexion with the Royal Infirmary, for his uncle, Sir Thomas Boyd, was Lord Provost when the new infirmary was built, and contributed so much to the success of that great undertaking that the managers placed his bust *vis-à-vis* to that of Drummond, who was Lord Provost when the original Royal Infirmary was founded, at the main entrance of the institution. He had the inestimable advantage of having to struggle hard in his early days, and he owed his ultimate success to his own exertions only. The way of the Edinburgh consultant is different from that of his London colleague, and Boyd began as a general practitioner, and to a small extent as a club doctor. It was probably this experience and the knowledge therein acquired that there was some good as well as a lot of evil in contract practice which was responsible for the moderate attitude he assumed during the Insurance Act controversy in 1911. Later he secured the appointment of Certifying Factory Surgeon for Edinburgh; then that of extramural clinical tutor, the duties of which post occupied the hours from 6.30 to 8.30 on four evenings of each week throughout the session; and he was one of the physicians to the New Town Dispensary, then one of the most popular of these peculiarly Edinburgh institutions. All these appointments brought him in a little money which enabled him to keep the wolf from the door. They took up a lot of his time, but not all his time. He kept steadily in view his ambition to be a hospital and consulting physician, and every minute he could spare was spent in research work in the laboratory of the Royal College of Physicians. There, under the influence of Noël Paton, he devoted himself mainly to biochemical work and published many papers, alone or conjointly with fellow workers. For a time he lectured in the extramural school on materia medica and therapeutics, and held for the usual term the post of university examiner in these subjects. But I think he was glad when the time came when he was able to transfer his energies to the teaching of clinical medicine, for, like most Edinburgh physicians, he was devoted to teaching, and he let nothing stand in the way of his clinics. As professor of clinical medicine he was chairman of the Clinical Medicine Board, and he was responsible for the organization of the special examination in clinical methods which elicited the encomiums of the inspector of the General Medical Council.

I think the outstanding features of his character were his determination and conscientiousness. To some people work is easy; they have no temptations not to work. It was not so with Boyd. He was a keen and excellent golfer, a keen fisherman, and a good shot. Whist and later bridge attracted him, and he was one of the liveliest at the gathering of the Octogenarian Club, of which he was secretary from its initiation. But he never let any of his diversions interfere with his work. No one could ever get Boyd to play golf with them on his dispensary afternoons, and the number of times when he did not do his out-patients at the infirmary must

have been very few. In all these years, living so close, we saw a great deal of each other, and many a night we sat into the small hours discussing matters grave and gay. He had a very sound judgement and a well-balanced mind. His temper flamed up against injustice and wrong-doing, but it soon subsided, and his ultimate attitude to an erring brother was rather that of sorrow than of anger. His attitude during the war was characteristic of the man, and both as a very intimate friend and as convener of the Emergency Committee I probably knew more of it than anyone. He was very busy and very useful at home, he had no burning desire for military glory, and he was just beginning to reap the harvest of all his hard work in a rapidly increasing consulting practice. Further, he had only recently been appointed principal medical officer to the Standard Life Insurance Company, and the directors were not anxious to lose even for a time his services. But after careful consideration of the pros and cons he came to the conclusion that it was his duty to go, and that for him settled the matter. First as physician to the 58th General Hospital in France, and later as consultant to the forces in Egypt and Palestine, he rendered very valuable services to the army, which were recognized by the decoration of a Companionship of the Bath. His C.M.G. had been awarded for his services in the South African war.

A few days before his death he indicated a desire that there should be no display at his funeral, and in accordance with this wish the arrangements made were of the simplest possible character. But the respect and affection in which he was held were shown by the very large assemblage of Edinburgh's leading citizens when he was laid in his last rest in the Dean Cemetery beside so many of Edinburgh's honoured dead. To Mrs. Boyd, who has borne so heroically the tragedy of his long sufferings, and to his two fatherless daughters the sympathies of their friends go out in the fullest measure.

THE LATE SIR PATRICK MANSON.

Memorial Service in St. Paul's.

A SERVICE in memory of Sir Patrick Manson, G.C.M.G., M.D., F.R.S., was held at noon in St. Paul's Cathedral on Wednesday, April 12th. The officiating clergy were the Right Rev. Bishop Montgomery, Prelate of the Order of St. Michael and St. George, the Venerable E. E. Holmes, Archdeacon of London and Canon Residentiary of St. Paul's, Canon Alexander, and the Rev. E. T. R. Johnston. The service was choral, and included the hymns "Abide with me" and "Now the labourer's task is o'er," Psalm xxiii, and the anthem by S. S. Wesley, "Thou wilt keep him in perfect peace, whose mind is stayed on Thee." The lesson was from 1 Corinthians xv, and at the end of the service Chopin's "Marche funèbre" was played. The widow, Lady Manson, and Dr. and Mrs. P. Manson-Bahr were among the chief mourners. The Secretary of State for the Colonies was represented by Lord Wodehouse, the Royal Society by Sir Ronald Ross, the Royal College of Physicians by Sir Humphry Rolleston, the Royal Society of Tropical Medicine and Hygiene by Sir James Cantlie, the Seamen's Hospital Society by Sir James Michelli, the Lister Institute by Sir Frederick Andrewes, the Royal Society of Medicine by Sir John Bland-Sutton, the Medical Society of London by Mr. James Berry, the University of Cambridge by Professor G. H. F. Nuttall, the London School of Tropical Medicine by Dr. H. D. K. Newham and Professor R. T. Leiper, the London (Royal Free Hospital) School of Medicine for Women by Dr. May Thorne, St. George's Hospital Medical School by Dr. Harold Spitta, the Tropical Diseases Bureau by Dr. A. G. Bagshawe, the Wellcome Bureau of Scientific Research by Dr. Andrew Balfour, the Army Medical Service by Major-General Sir William Leishman, and the Ministry of Pensions by Colonel Sir Lisle Webb. The British Medical Association was represented by Dr. N. G. Horner, Assistant Editor of the *British Medical Journal*, and Dr. R. Scott Stevenson, Sub-editor. The large attendance also included Admiral of the Fleet Sir Henry Jackson, Sir Reginald Antrobus, Sir Charles Lucas, Dr. J. Mitchell Bruce, Miss Aldrich Blake, and Dr. G. C. Low, Senior Physician to the Hospital for Tropical Diseases, Endsleigh Gardens.

AT a recent meeting of the Toronto Academy of Medicine Dr. Newton A. Powell, chairman of the Hospital Supplies Committee, presented a bronze tablet to the Academy in memory of the Fellows who died on active service during the war.

The Services.

TEMPORARY NAVAL RANK.

THE Board of Admiralty have decided that medical officers who were granted temporary commissions as Surgeon Rear-Admirals and Surgeon Commanders during the war, and whose commissions did not terminate before November 11th, 1918, are entitled to retain their rank and also to wear the uniform of that rank on State and other occasions of ceremony within the British Empire. The dresses and occasions on which they are to be worn will be found on pp. 2301-2 of the *Quarterly Navy List*.

I.M.S. DINNER.

THE annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant on Wednesday, June 14th, at 7.45 p.m., with Lieut.-Colonel J. Anderson, C.I.E., in the chair. Tickets and all particulars may be obtained from the joint honorary secretary, Colonel J. J. Pratt, I.M.S.(ret.), 63, Addison Road, Kensington, W.14.

DEATHS IN THE SERVICES.

Lieut.-Colonel David Stuart Erskine Bain, Madras Medical Service (retired), died at St. Heliers, Jersey, on March 31st, aged 66. He was born in Edinburgh on July 23rd, 1855, the son of Staff Surgeon David Stuart Erskine Bain, Army Medical Department; he received his medical education at Charing Cross Hospital, taking the M.R.C.S. and L.S.A. in 1876. After filling the posts of resident medical officer, Newark-on-Trent Hospital, and of medical officer of the Small-pox Hospital in the same town, he entered the I.M.S. as surgeon in 1879; he became lieutenant-colonel on March 31st, 1899, and retired on April 5th, 1910. Most of his service was spent in civil employment in the Madras Presidency, where he was superintendent of the Madras Lunatic Asylum (1884), garrison surgeon, Bangalore (1885), civil surgeon of Negapatam (1890), and civil surgeon of Coorg (1892). He rejoined for service in the late war from February 1st, 1915, serving in the York Place Indian Hospital at Brighton till it was closed at the end of that year.

Surgeon-Major Robert Edward Heath died at Eastbourne on January 8th, aged 83. He was born at Arklow, county Wicklow, on January 1st, 1839, and educated at Belfast and Dublin; he graduated M.D. Queen's University, Ireland, in 1859, and took the M.R.C.S. in the following year. He entered the army as assistant surgeon on October 1st, 1860, became surgeon-major in 1875, and retired on half-pay in 1877. He served in the Hazara campaign on the north-west frontier of India in 1868.

Universities and Colleges.

UNIVERSITY OF WALES.

THE Council of the University of Wales has decided to confer the honorary degree of LL.D. upon Sir A. Garrod Thomas, M.D., at the meeting of the University Court to be held at Aberystwyth next July.

UNIVERSITY OF GLASGOW.

AT the graduation ceremony on April 18th the following degrees were conferred:

M.D.—J. A. Gilfillan.

M.B., Ch.B.—*H. M. Walker, *J. T. Moffat, *J. E. Jeffrey, *J. M'Nair, *R. M'L. Carmichael, *W. Gibson, R. Adam, W. R. Allan, Martha L. Anderson, W. Bain, A. Baird, D. Baird, B. Barrowman, Mary E. Berry, A. R. Black, Margaret W. Blackwood, A. W. Borland, Jemima G. Brodie, A. O. Bruce, Catherine M'L. Buchanan, J. I. Cameron, J. A. Cameron, Katharine L. Couper, W. Davie, C. D. H. Eason, I. Fine, Margaret A. Galbraith, W. Geyer, G. S. Gilchrist, Margt L. Gilchrist, Katharine J. Guthrie, J. M. Hain, D. R. Hamilton, E. E. Henderson, Catherine Hill, Isobel R. Hill, M. Jackson, H. Kay, Jean V. Kirkwood, D. Lamont, Rhoda M. J. Lochhead, G. M'Alpine, T. S. MacDonald, W. D. Macfarlane, [illegible], J. C. M. Matheson, P. Milligan, Elizabeth M. Nairn, W. G. Niblock, G. S. P. Noble, Margaret M. Paterson, Joanna T. Rae, W. Robinson, J. Rowatt, Rosemary E. Scanlan, J. Shaw, Isobel M. Smith, J. Sneddon, A. V. Steen, A. Symon, A. B. Taylor, C. N. Temple, D. M. Thompson, Eleanor M. Torrance, A. A. Van-Lingen, J. W. Walker, Elizabeth Wheatley, A. Wilson.

B.Sc. (*in Public Health*).—H. A. Ross.

* With commendation.

The following University prizes were also distributed:

An Arnott prize of £25 for examination in physiological physics, H. S. Russell. Bellahouston gold medals for eminent merit in thesis for M.D., D. K. Adams, T. J. Mackie, Noah Morris. Asher Asher gold medal, special class prize, for laryngology and rhinology, R. H. Burnett.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the monthly business meeting of the President and Fellows held on April 7th the following were admitted to the Licence to practise midwifery of the College: Roger Calleja, Creina Shepherd.

At the same meeting Dr. Arthur Frederick Bernard Shaw was duly elected a Fellow.

THE list of successful candidates at the examination of the London School of Tropical Medicine printed last week (p. 628) should have indicated that Dr. D. Fitzgerald Moore passed with distinction.

Medical News.

SIR THOMAS LEWIS will deliver the seventh Mellon lecture on May 8th before the Society of Experimental Biology of the School of Medicine, Pittsburgh University, U.S.A., on the subject of clinical electro-cardiography.

THE Illuminating Engineering Society will hold a joint discussion with the Sections of Surgery and Ophthalmology of the Royal Society of Medicine, on the use of light in hospitals, including the illumination of wards and operating tables, and some other special applications of light. The discussion will take place on Thursday, April 27th, at 8 p.m., at the house of the Royal Society of Arts, John Street, Adelphi, W.C.2.

DR. NORMAN MACLEOD HARRIS, who served abroad during the war with the Canadian Army Medical Corps, has been appointed chief of the division of medical research of the Canadian Dominion Department of Health.

A COURSE of fourteen lectures on psycho-neuroses will be given by Dr. Millais Culpin at the London Hospital Medical College on Tuesdays and Fridays at 5.15 p.m., commencing on May 2nd. The fee for the course will be one guinea.

AT the evening meeting of the Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C., on April 25th, Mr. A. C. Abraham will discuss the pharmaceutical aspects of opium, and Mr. F. Browne, secretary of the *Codex* sub-committee, will deal with standards for surgical dressings. The chair will be taken at 8 p.m., and medical friends of members and associates will be cordially welcomed.

AT the meeting of the Glasgow Medical Lunch Club on April 13th the president of the club, Dr. Frank W. Martin, was entertained as the guest of honour on the occasion of his marriage. Dr. W. Adam Burns, who was in the chair, referred to the recent wedding, and on behalf of the members expressed their good wishes to Dr. Martin for his happiness and prosperity. Dr. David McKail presented to him, in the name of the club, a handsome silver salver, suitably inscribed.

AT the annual competitions of the St. John Ambulance Association at Reading on April 8th the Mayor presented Dr. G. H. R. Holden with a silver cigar and cigarette case, in recognition of his twenty-one years' service as chairman of the Reading centre.

FOR the Harringay division of Tottenham Dr. A. G. Newell of Harringay was re-elected a councillor by a majority of 1,164 in a straight contest with a Labour candidate.

AT the meeting of the Assurance Medical Society to be held at the house of the Medical Society of London on Wednesday, May 10th, at 5.30 p.m., papers will be read by Mr. W. McAdam Eccles on "Further experiences of war wounds in general in relation to life assurance," and by Mr. G. E. Gask, C.M.G., on "War wounds of the chest and their prognosis in relation to life assurance."

DURING the Annual Conference of the Chartered Society of Massage and Medical Gymnastics a lecture and demonstration on "Tendon transplantation" will be given at the Salford Royal Hospital, on Saturday, April 29th, at 10.30 a.m., by Mr. Robert Ollerenshaw, F.R.C.S., Honorary Surgeon in charge of the Orthopaedic Department. Medical practitioners and students are invited to attend.

A COURSE of twelve lectures on the management and feeding of infants and young children will be given to medical practitioners by Dr. Erie Pritchard, physician in charge of the Infant Welfare Department at the St. Marylebone General Dispensary, Welbeck Street, W., commencing on Monday, May 1st, at 6 p.m. The fee for the course is two guineas.

PROFESSOR MAURICE ARTHUS, the well-known physiologist of Lausanne University, proposes to give a gratuitous course to students in experimental biology from July 24th to August 12th. Inquiries should be addressed to him at the Physiological Institute, Champ de l'Air, Lausanne.

THE cases of plague in India show signs of increasing. In the week ending January 7th, 1922, there were 1,944 seizures and 1,518 deaths, in that ending February 4th 2,580 seizures and 1,975 deaths, while in the week ending March 4th there were 4,004 seizures and 3,133 deaths.

SIR F. J. WILLIS, the Chairman, and Mr. A. H. Trevor and Dr. A. Rotherham, two Commissioners of the Board of Control, have been appointed to hold a sworn inquiry into the allegations of ill treatment on the part of certain attendants at Long Grove Mental Hospital, Epsom, which were made by Mr. Cox, an ex-inspector of police, before Sir Cyril Cobb's Committee. The inquiry will be opened at Long Grove Mental Hospital on Monday, April 24th, at 11 a.m., and will be open to the public.

THE centenary of Bretonneau will be celebrated at Tours from June 24th to 26th. Pierre Bretonneau first described diphtheria and gave it its name, and also differentiated typhoid fever. A committee of patronage has been formed, consisting of Professors Achard, Gilbert, Jeanselme, Menetrier, Hervé, and Widal, and Drs. Villaret, Laignel-Lavastine, Apert, Tricot-Royer, and Singer. The subscription of 20 francs should be sent to Dr. Dubreuil-Chambardel, École de Médecine, Tours.

THE annual post-graduate course on oto-rhino-laryngology, held by Professor Moure at Bordeaux, will take place this year from July 24th to August 5th, immediately after the tenth International Congress on Otology at Paris.

A VIOLENT outbreak of small-pox has occurred at San Domingo, Haiti. There have been 22,000 cases with 225 deaths.

PROFESSOR J. PETRI, of Berlin, the inventor of the "Petri dish," died recently.

FESTIVITIES have been organized to take place at Pau to celebrate the second centenary of Théophile de Bordeu (1722–76), the founder of the Vitalistic School at Montpellier.

A BUST of Dr. José Penna, the Argentine epidemiologist, was recently unveiled in the medical department of the University of Buenos Aires.

DURING 1921 four well-known Paris dermatologists—Brocq, Darier, Queyrat, and Thibierge—had to resign their hospital appointments owing to the age limit.

IT is announced that a site in Bloomsbury, adjoining the land reserved by the Government for the new buildings of the University of London, has been acquired by the Trustees of the Rockefeller Foundation, in agreement with the Minister of Health, for the proposed School of Hygiene in London.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

PARKINSON'S DISEASE.

MAJOR S. S. VAZIFDAR, I.M.S. (Bombay), writes: I shall be obliged if any reader will give information on the following two points: (1) Is there any remedy to check permanently the tremors and further progress of paralysis agitans? In a patient that I have, gelsemium temporarily arrested the tremors. Parathyroid extract and electrical treatment were tried ineffectively. (2) Has thyroid grafting been done in England for arresting senescence? If so, with what effect? Has thyroid or parathyroid grafting been done in any case of Parkinson's disease? If so, with what result?

SALINE TASTE.

DR. CHARLES BEGG (Bath) writes: Can any of your readers throw light on the cause of an intense salt taste in the mouth? My patient is a lady aged 40, condition of mouth and teeth perfect, general health excellent. She consulted me only for this intense saline taste, which is increased when tea is taken but is present always in a lesser degree with all food, and worse without food. She has been taking small doses of thyroid and salol for some time, and is living chiefly on eggs, milk, toast, and butter.

INCOME TAX.

"G. W. G." inquires whether deductions can be claimed for post-graduate lectures and postal instruction.

*** Inasmuch as the expenditure is incurred to *improve* the professional ability, the answer is in the negative.

"MEDICO" is employed by a local authority as assistant medical officer, and is allowed £30 for travelling expenses. He asks if he can claim full motor car expenses.

*** Under the Income Tax Acts the salary falls for assessment under Schedule E, and expenses can be deducted only in so far as they are incurred "wholly, exclusively, and necessarily in the performance of the duties of the office." We apprehend that "Medico" will have considerable difficulty in proving to the income tax authorities that the amount allowed him by the employing local authority is less than the amount "necessarily" incurred by him in the performance of the duties of that employment.

"B. G." inquires as to the amount he can claim in respect of various car transactions.

*** Depreciation cannot be allowed, under the Income Tax Acts, in connexion with assessments on professional profits. A definite answer cannot be given because "B. G." does not state the original cost to him of the Swift and Argyll cars, nor does he say whether they were then new or secondhand. The ultimate result is that these two cars have been replaced by a new Calcott at a total cost of £470. Assuming that the two original cars cost as much as a new Calcott would then have cost, "B. G." seems entitled to deduct £470 as professional expenses laid out over the periods stated.

LETTERS, NOTES, ETC.

STAMMERING.

THE MEDICAL OFFICER OF THE SPEECH CLINIC, West End Hospital (London), writes: In your issue of April 1st you quote the report of the Chief Medical Officer of Education for the year 1913 as stating that "in this country, broadly speaking, stammering has not been viewed as a disease, and consequently has been to a large extent ignored by medical men." The condition to-day is the same. Although stammering is a neurotic condition belonging to the same class as hysteria, the anxiety neuroses, the phobias, etc., it has been completely neglected by medical science. Most physicians consider it incurable, and tell the patients to wait and they will outgrow it. Others consider it to be merely a bad habit that can be corrected by exercises. Few recognize that it involves a defect of character of a serious kind. The treatment of such a disease can be carried out only under medical care.

FENCING AND PHYSIC.

MR. A. LANDON WHITEHOUSE, M.R.C.S., L.D.S. (117, Park Street, W.1), writes: So many doctors have been interested in fencing (vide the "Doyen" Cup and the "Savage" Shield) that it would seem a pity if this ideal exercise should not continue to receive support from the profession. For patients and physicians it has many advantages. It can be indulged indoor or outdoor, at all seasons, and in little space; it is a sport which can be started at any age. Might I, through the courtesy of your columns, ask members of the Association, interested in the formation of a medical team to visit the London "Salles" and to advance the sport among doctors, to communicate with me?

ALPINE TREATMENT OF TUBERCULOSIS.

DR. JOHN BAIN, M.B.Glasg., Medical Officer, ss. *Goorkha*, writes: I have read with much interest the letter of Dr. Felix Savy (March 4th, p. 374) upholding the claims of the climate of Great Britain as opposed to those of Switzerland as being quite suitable for the treatment of pulmonary tuberculosis. With all that he says I am entirely in agreement, and my experience of the home treatment of phthisis was gained not in the bracing atmosphere of a sanatorium, but in the Tyneside town of South Shields, the climate of which I am afraid could not be claimed, even by an enthusiastic Tynesider, as an ideal one for the treatment of patients suffering from lung trouble. One had only to open a window in Shields for an hour to see how grimy and smut-stained the exposed portion of the curtain had become, thus showing what a vast amount of impurities were floating about in the air. Yet it was in this smoke-laden atmosphere that I was able for several years before the war to arrest successfully the spread of tuberculosis in the lungs of quite a number of young people of both sexes. These patients all belonged to the industrial classes, and the sanatorium was brought to them by putting them to bed as long as absolute rest was necessary, and opening wide day and night the windows of their bedrooms; in addition the usual sanatorium routine was carried out as far as a busy panel practitioner could give his supervision, and they also received the appropriate medical treatment. Thus by a combination of medical treatment and open-air methods quite a number of young people made permanent recoveries from attacks of undoubted pulmonary phthisis in a climate which most people would regard as utterly unsuitable for this purpose. My object always was to get my patients better in the town and district in which they contracted the disease, and where by force of circumstances they were compelled to stay and to earn their living.

THE TREATMENT OF PNEUMONIA.

DR. A. J. MANASSEH (Beyrout, Syria) writes: I should like to add my testimony once more to that of Dr. Arthur J. Mathison on the treatment of lobar pneumonia by potassium iodide and creosote (BRITISH MEDICAL JOURNAL, March 11th, 1922, p. 420); I have found these drugs, as he has, a specific remedy for this disease. I have for years used the following mixture, recommended, I believe, for the first time by Dr. Mathison, and I have always found it reliable in giving very satisfactory results in the minimum of time:

℞ Potass. iod.	...	3j
Creosote ...	...	3ss
Ex. glycyrrhiz. liq.	...	3iv
Sp. vin. gallic.	...	3vj
Aquae	ad	3xij

Sig.: Two tablespoonfuls every four hours.

I have had within the last four weeks ten cases of lobar pneumonia; for these, the above mixture was used at different periods of development. The temperature came down between the fifth and tenth days and convalescence followed without any interruption. I need not say that all hygienic measures were taken to ensure plenty of fresh air and sunshine to the sufferers.

ABSENT TREATMENT AT SEA.

IT is stated that American sea captains have not been slow in availing themselves of the wireless medical advice offered by the United States Public Health Service. A hospital in New York reported that it had received a message at 10 o'clock one night from a steamship saying that a man on board was suffering from pain in the abdomen, persistent vomiting, and inability to lie down owing to the pain. The medical officer on duty promptly prescribed treatment, and next morning the ship sent a wireless message of thanks saying that the patient was much better.

BRITISH FINE CHEMICALS.

THE Association of British Chemical Manufacturers (166, Piccadilly, W.1) has published a new list of fine chemicals which are manufactured in this country by members of the association, including a large number of organic products, fine inorganic chemicals, indicators, and microscopic stains. The manufacture of fine chemicals is recognized as a key industry of high importance in which this country ought to be independent of foreign supplies, and the present time is critical in the establishment of the industry on a permanent and successful basis. It is pointed out, for instance, that there are certain chemicals on this list of which a permanent supply cannot be guaranteed unless there is sufficient demand. The names of the various chemicals are given, with an indication of the particular firms which manufacture each preparation. The firms included number thirty-eight in all.

THE HORRORS OF PROHIBITION.

A CORRESPONDENT sends us the following item of information, giving it the cryptic heading "*Dry* Rot": Four Texas doctors have sued the state federal prohibition director for 10,000 dollars, on the ground that they were subjected to "shameful humiliation and disgrace" in the eyes of both their patients and their fellow practitioners by his refusal to renew permits for the plaintiffs to prescribe alcohol for their patients.

THE CINEMATOGRAPH AND VIVISECTION.

THE HON. STEPHEN COLERIDGE writes: You have accused me in your paper of making "an attack on experimental medicine." I have never done so; all I attack is the infliction of severe suffering upon animals not for their own good, and if this is done in the pursuit of experimental medicine I attack that infliction of severe suffering. I have no quarrel with experimental medicine if it is not stained with cruelty to animals.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 32, 33, 34, and 35 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 30 and 31.

THE appointment of certifying factory surgeon at Crondall (Hants) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Six lines and under	0 9 0
Each additional line	0 1 6
Whole single column (three columns to page) ...	7 10 0
Half single column	3 15 0
Half page	10 0 0
Whole page	20 0 0

An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.